

CIO

THE MAGAZINE FOR INFORMATION EXECUTIVES

JANUARY 15, 1997

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How To Get What You Want

**Influencing
Technology Vendors**

PAGE 46

IS As Intranet User

PAGE 38

**Advanced Technology
Groups That Work**

PAGE 70

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Inside CIO

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46 Pacific Gas and Electric's John Danielsen fought for standards in software licensing. Cover photo by Kent Hanson

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By Tom Field

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Don't hesitate to put the squeeze on your suppliers. Influencing vendors to satisfy corporate needs is simply good business.

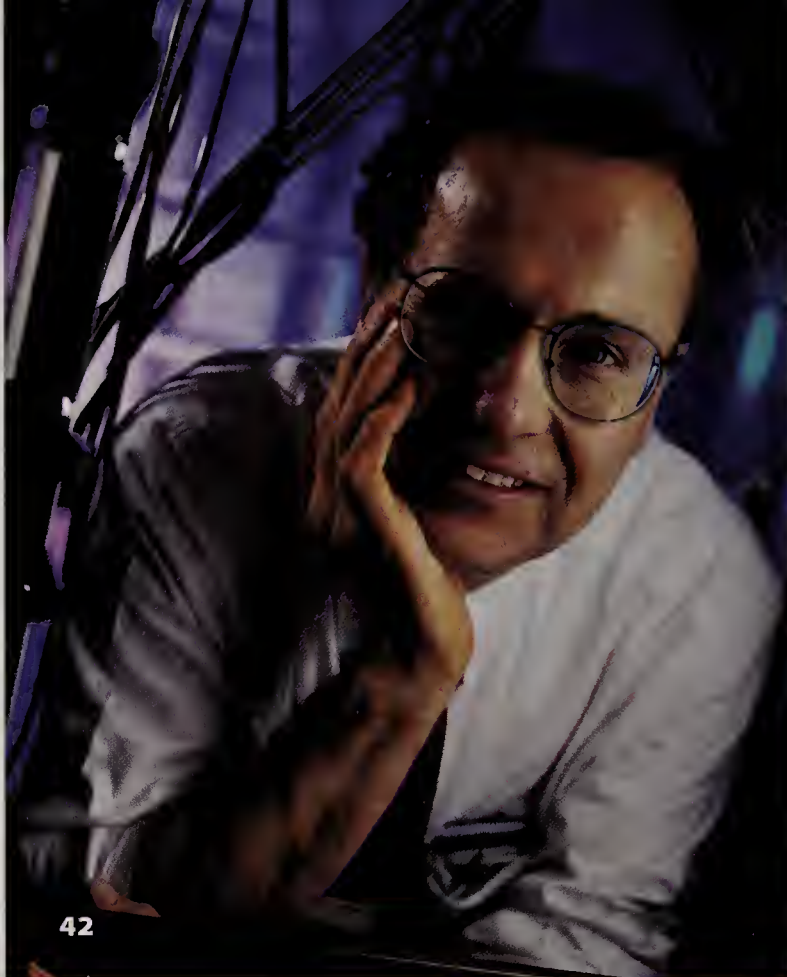
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...and into the ether. Today's vast corporate libraries come in just about every medium. But how can you avoid having your information resources gather dust?

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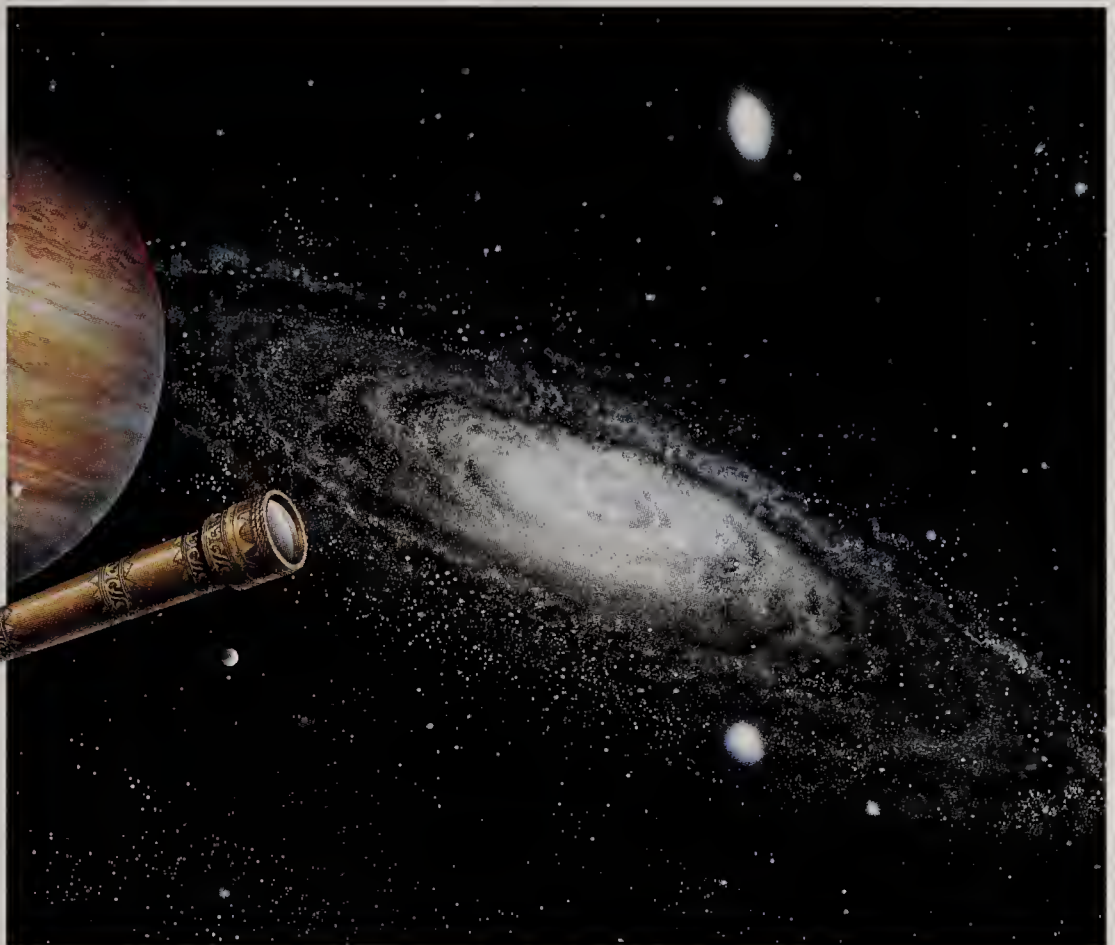


MORE ►►►

Galileo combined data with new technology, drew conclusions from careful observation and informed others of his astounding findings.

When Galileo first peered through a telescope, he saw something that would radically alter man's view of

his position in the cosmos — evidence that the earth was not the



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center of the universe. The data showed the earth to revolve around the sun.

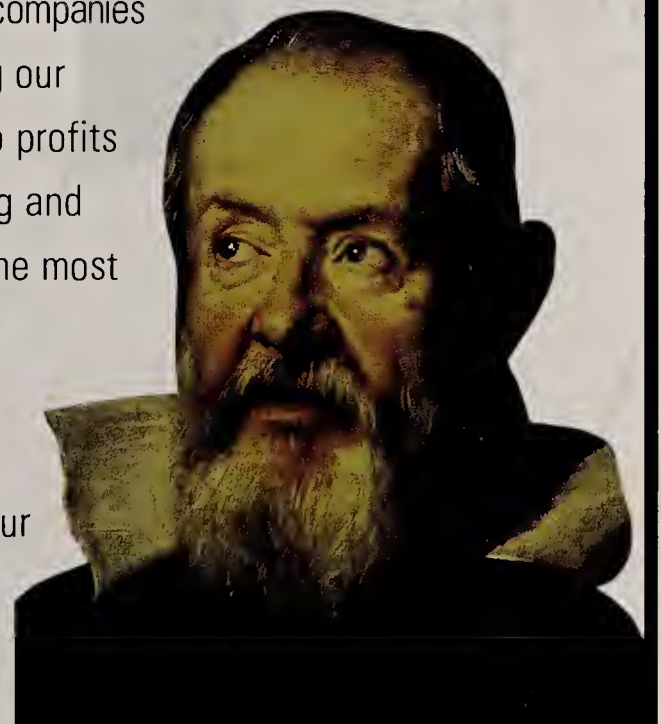
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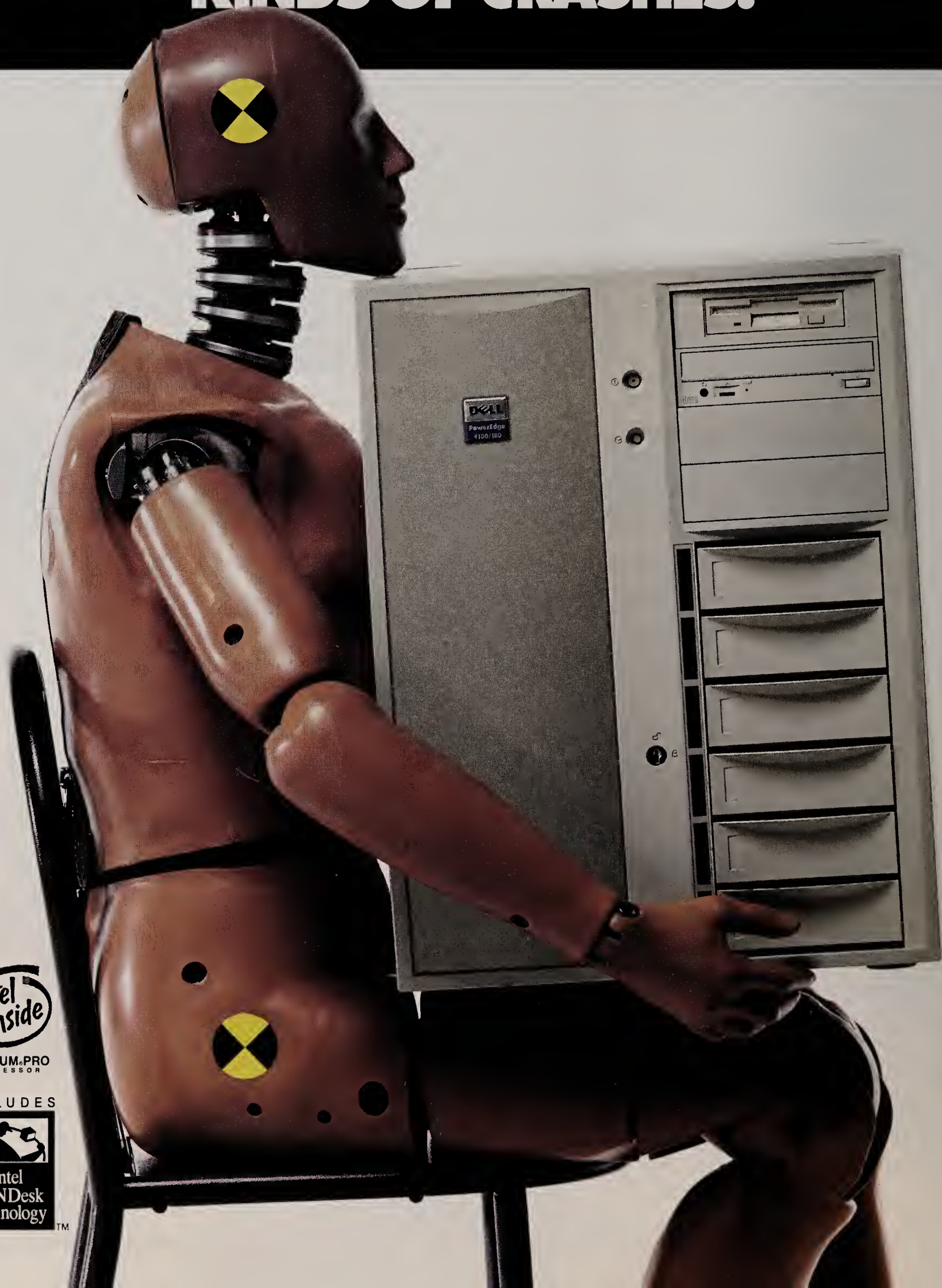
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- **Year 2000 Date Conversion**
(www.cio.com/forums/year2k.html)
- **Webmaster's Role**
(www.web-master.com/forums/career.html)
- **SAP R/3 Enterprise Software**
(www.cio.com/forums/SAP.html)

LOOKING BACK

The CIO Archive Search our collection of CIO feature articles dating from September 1994.
www.cio.com/ciomag/archive/cio_index.html



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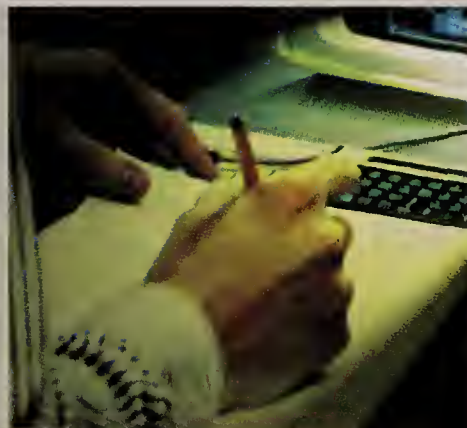
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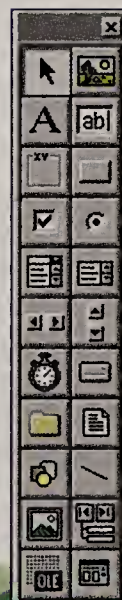
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In Box

LETTER FROM THE EDITOR, READER FEEDBACK AND HOW TO REACH US

It's 1997. The year 2000 is a mere 35 months away! When I was a kid, it was hard for me to imagine being a part of the 21st century. Some IS folks are still stuck in that rut.

But we will be a part of it, and whatever decisions we make today are decisions we're going to have to live with. Here's my list of top priorities for IS managers for 1997:

1. Address the year 2000 date-conversion problem.
2. Get the desktop under control.
3. Have some of your most creative people work on ways to exploit the Internet.
4. Shorten your systems delivery time.
5. Develop a sound methodology for rationalizing and prioritizing IS projects.
6. Make it possible for users to work anywhere, any time.
7. Shore up your systems security.
8. Develop partnerships with key technology suppliers.
9. Build a knowledge management infrastructure that makes sense for your company, its business and its culture.
10. Make it to 1998.

I'd like to add a personal note to the list: Try to achieve some balance between work and home, whatever "home" may be for you. We owe it to ourselves and our families—and our bosses, employees and peers—to keep things in perspective.

Here's to a great '97 for all of CIO's readers, advertisers, business partners and employees. If you have a top 10 list you'd like to share, send it to me at lundberg@cio.com.

Happy New Year.

Alkis Lundberg
lundberg@cio.com



FROM OUR READERS

STRATEGIC SALES

In Tom Field's insightful and comprehensive article "Covering New Territory" [Sept. 15, 1996], it is reassuring to see that sales force automation, also termed "customer asset management," now is being integrated with other business functions in support of a company's business strategy. As a consultant, I've practiced—and preached—that approach since the mid-1980s. For the CIO, the job may be more complicated, but the chance of success goes up measurably. I appreciate being quoted in the article, but please note that the company name is Information Systems Marketing Inc. (ISM), in Washington, D.C.

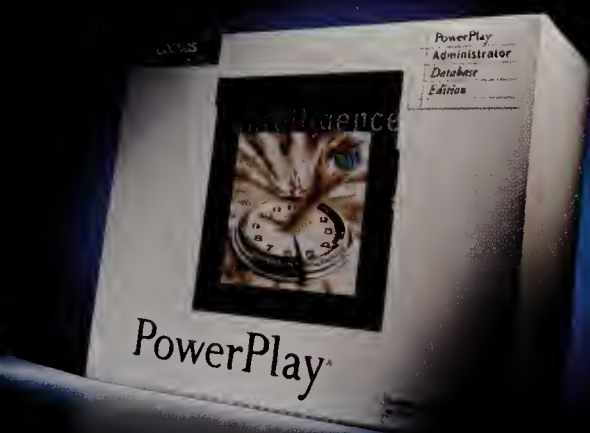
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In Box

WHAT ABOUT RACE?

[In your Nov. 1, 1996, report on executive turnover], you note correctly the gender and age gaps. What about the race gap?

Christopher A. Douglas

*Relationship Manager, EDS Internal Audit
EDS Employee Credit Union
Plano, Texas*

Sadly, the sample size was not big enough to get a handle on the race gap, which in itself would seem to say something about that particular gap. If you have any ideas about how CIO might tackle this subject in a useful way, please let us know!

ROI & BRUSSELS SPROUTS

Nice article on ROI ["Digesting the ROI Paradox," Oct. 1, 1996]. I happen to like brussels sprouts, however.

Tom Groot

*Vibro-Acoustic Sciences
San Diego
tomg@vasci.com*

BRIGHT IDEAS

I just read about "process excellence" [Trendlines, Nov. 15, 1996], or the combinations of the "incremental improvements of TQM and the more revolutionary steps associated with BPR." Perhaps some of these so-called management consultancies should do a little more research before laying claim to such bold "new" ideas.

Specifically, they might be interested

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in reading Joseph Juran's work *Managerial Breakthrough*. Juran details two approaches for management to take. First, he outlines how management should organize itself in a steering committee and what processes it should follow for significant breakthrough. Second, he describes how to switch back to a control and continuous improvement mode once the breakthrough is achieved.

By the way, I believe Juran's book was first published in 1964. One might wonder about infringements, etc.... but then again, guys like Joe Juran and Ed Deming seemed to be in it for quality, not the money.

James Hay

*Director, Business Engineering
American Annuity Group, IS
Cincinnati
jhay@aagis.com*

NEW KID ON THE BLOCK

Being very new in my position, I have found it a requirement to review magazines and other publications with vigor.

It has become obvious that I can read only a few magazines because of time restrictions and information overload. Your magazine has become a main focus.

Continually you bring to the forefront information that increases my opportunities to be successful. Heaven knows, few of us could ever stay on top of all the technologies and business changes in the industry. CIO has become a powerful aid in my transition into management. Keep it up!

Steven A. Wood

*Director of IS
The Western Sugar Co.
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Publisher's Note

"We want to make maximum use of the intranet in all of our business operations. Ideally we want it to be so commonplace that it's viewed like a public utility—you only notice it when it's down."

*—Robert R. Walker, Vice President and CIO
Hewlett-Packard Co.*

The telephone used to be the quickest and most common way to reach someone. Then answering machines and voice mail systems were invented, leading to the frenzied era of "Gotta check my messages." Need to

speaking with someone immediately? Beep 'em. And not just if your wife is going into labor. After all, we're long past the days when only doctors and police officers carried beepers. Still not quick enough? Try the cellular phone. Or the fax machine. Or e-mail—which is used so frequently that one colleague mentioned receiving a "Bless you" message from an adjoining office after letting out a sneeze.

Because the choices for communicating are so plentiful, they can be somewhat overwhelming. How can corporations take advantage of the available technology

and still find the best, most cost-effective way to deliver messages and information?

Take a cue from Hewlett-Packard, a company for which a 48-hour, 100,000-user rollout of a new word-processing application is routine. HP used its eight-year-old TCP/IP-based information system to alert thousands of employees about their pending upgrade, then IS transmitted the new software from the master server to 400 file servers around the globe. And HP uses its corporate intranet, a system that was in place long before "Internet" became a household word, to facilitate personnel training, document management, team distribution, petty cash reimbursement and employee reviews.

Forrester Research Inc. in Cambridge, Mass., describes HP as a leader in corporate intranet development. Staff Writer Tom Field's article "Getting In Touch With Your Inner Web," beginning on Page 38, explores HP's road to leadership, the challenges it has faced along the way and the direction in which it's heading.



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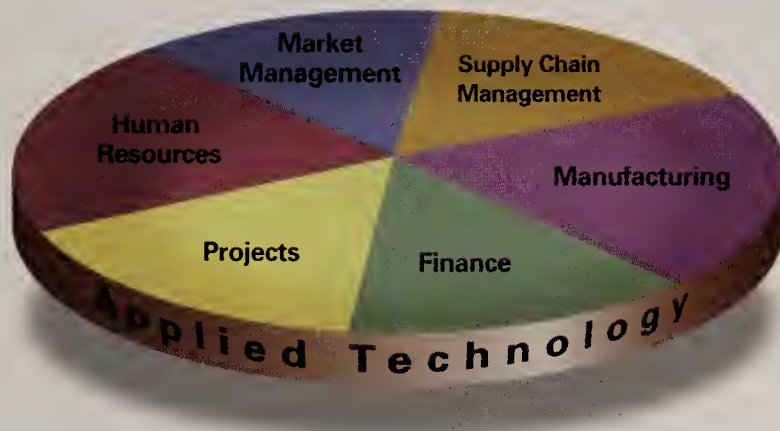
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Trendlines

NEWS, INSIGHT, HUMOR, REVIEWS

Edited by Cheryl Dable

Getting a Degree@university.edu

DISTANCE LEARNING How many times have you told yourself you'd gladly go back to school and chip away at that postgraduate degree if only your travel schedule would allow and it didn't take time away from family?

You might need a new excuse.

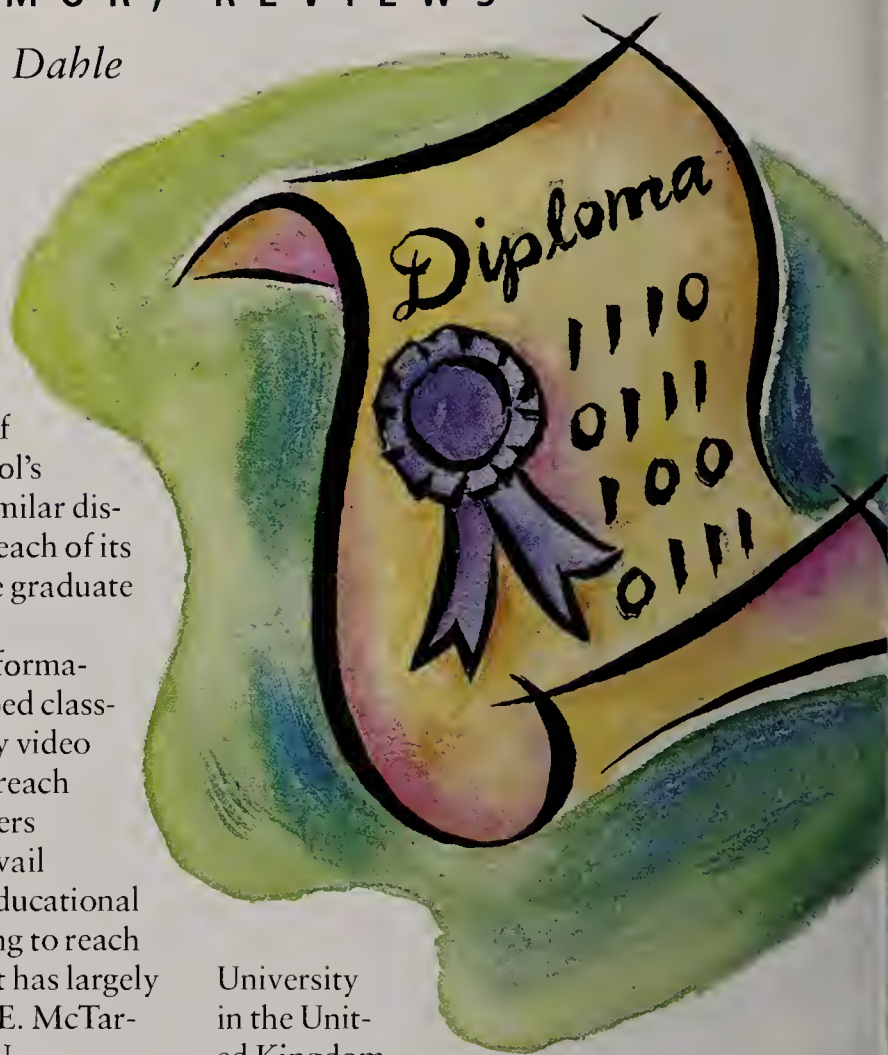
With the growth of Internet use, distance learning is the new Manifest Destiny, as universities from coast to coast pioneer ways to deliver college courses and even entire degree programs to nonresidential students. Education over the Internet long has been a part of some university systems, but now it is gaining widespread acceptance. Just last June, the governors of 10 Western states pledged to build a new "virtual university" in which students will register for classes online, download course material from the Internet and communicate with professors—even hand in term papers—via e-mail. In

August, the Florida State University System will open its new Florida Gulf Coast University (FGCU), and part of the Fort Myers-based school's charter is to incorporate similar distance learning practices in each of its 17 undergraduate and nine graduate degree programs.

FGCU's goal is to use information technology—videotaped classes and interactive, two-way video as well as the Internet—to reach working adults, homemakers and shut-ins who cannot avail themselves of traditional educational opportunities. "We're trying to reach out and serve a market that has largely been neglected," says Roy E. McTarnaghan, president of FGCU.

Among the models FGCU consulted to develop its approach are The Open

University in the United Kingdom, which serves more than 200,000 remote students, and the University of



Holy High-Tech Wheels!

SMART CAR Wouldn't it be cool to drive a car with all the accouterments of the Batmobile? You know, all that zippy, flashy stuff that would be the ultimate in convenience, elevate you to gadgetmaster status and even help you foil crimes?

Well, the new gizmo-laden OnStar system provides drivers with more than a few of those superhero perks. Available in 1997 Cadillacs, OnStar calls for emergency assistance if your airbag deploys, unlocks the car if you lock your keys inside, gives you directions to any location and even sends a tracking signal so the car can be traced if it's stolen.

The system, created by General Motors North American Operations, Delco Electronics Corp., Hughes Electronics Corp. and EDS Corp., combines a global positioning system with cellular phone technology and an emergency switchboard. The purpose of the product, which can be fully integrated into 1997 front-wheel-drive Cadillacs for just under \$1,000, is to make driving safer as well as more fun, says Chet Huber, managing director of OnStar.

Cape and blue tights not included. ■



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Trendlines

Maryland. Other U.S. innovators cited as inspiration for the Western Governors' Association model include the University of Wisconsin and Maricopa Community Colleges in Arizona.

Distance learning does pose challenges: How do you measure credit hours and semesters when students truly work at their own paces? How do you quantify university funding, which generally is based on the number of full-time students enrolled and the number of buildings filled? How do you deal with technical issues, such as working with configurations that vary from student to student?

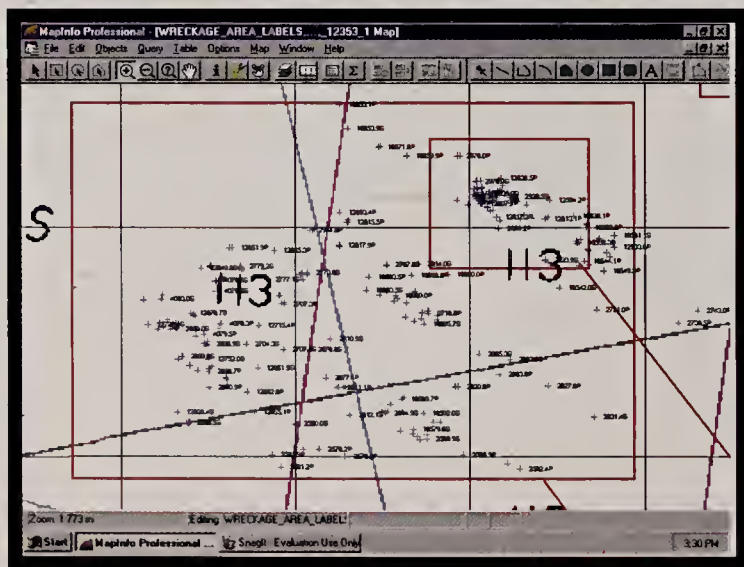
But practitioners say the technology also has unique benefits. Angela Ambrosia, professor at Maricopa's Rio Salado College in Tempe, Ariz., where more than 30 courses and an associate's degree are available online, says distance learning has become a great equalizer among students. Fast and slow learners are indistinguishable from each other, and students who normally might be reserved in a classroom often won't hesitate to speak up in a chat room. "One disabled student told me, 'It takes me an hour or two to type a sentence, but nobody knows that,'" Ambrosia says. *—Tom Field*

Tragic Task for Technology

GIS MAPPING Sifting through the debris of a plane crash to determine its cause is a sad and arduous task. It is even harder when the debris lies hundreds of feet below the ocean surface.

When TWA Flight 800 crashed off Long Island in July, killing all 229 people aboard, the National Transportation Safety Board used maps made with GIS software from MapInfo Corp. to aid in the search and depict progress graphically to families and the press.

In the days following the crash, a National Oceanic and Atmospheric Agency (NOAA) survey ship traversed the area constantly, towing a sonar device to scan the ocean floor.



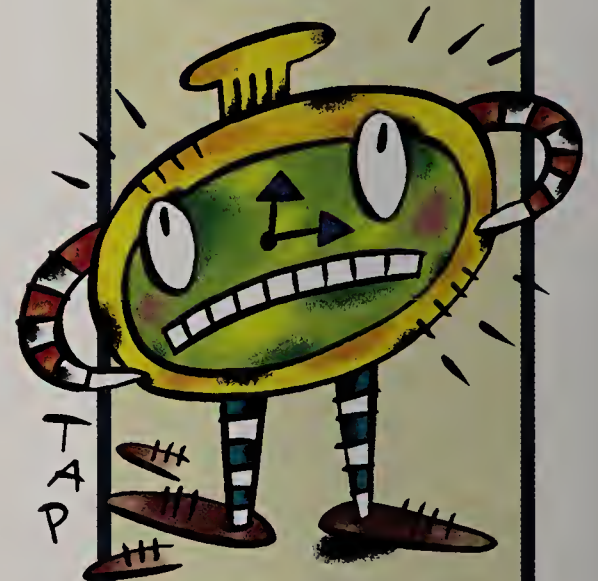
point the wreckage areas. For example, debris found near the nose landing gear probably came from the front section of the plane. Such information helped divers focus their search.

The whole data-gathering operation scanning the ocean floor took only a few days; feeding the data into a map took less than an hour. "We used to do it all on paper plots," says NOAA Lt. Cmdr. Gerd Glang. "Then in-house software was developed for nautical charting, but it didn't have the flexibility of plotting in all the different pieces of information."

—Jennifer Bresnahan

Training Hooky

ABOUT 85 PERCENT of managers report at least one challenge in providing management training for their staffs. The most common problems were scheduling when people could participate and then actually getting them to show up.



SOURCE: STRATEGIC INTERACTIVE GROUP AND HARVARD BUSINESS SCHOOL PUBLISHING

Saved by a Baby Bell

WIRED SCHOOLS Three years ago, Christopher Columbus School in Union City, N. J., was on the verge of collapse. Students in the predominantly poor city were performing below the national average academically, and morale was at an all-time low. But just steps ahead of state intervention, Union City embarked on a partnership with Bell Atlantic Corp. to revamp the school curriculum with computers.

All 135 seventh-graders and their teachers were provided

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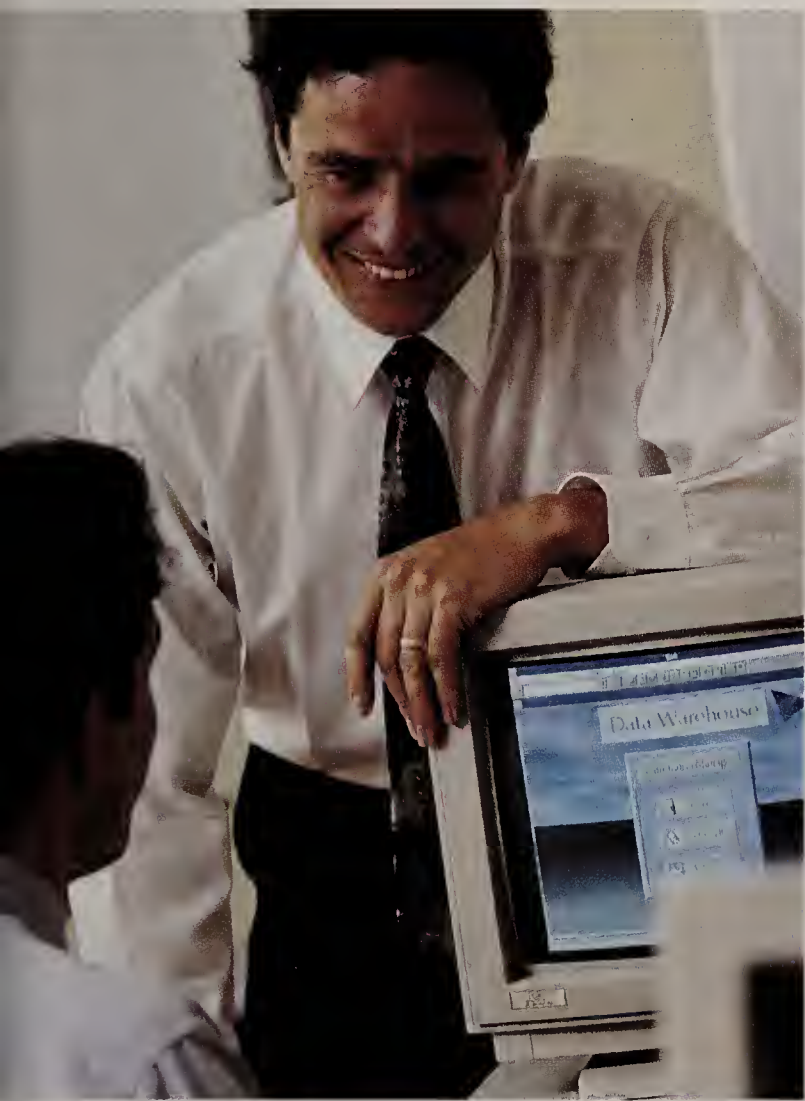
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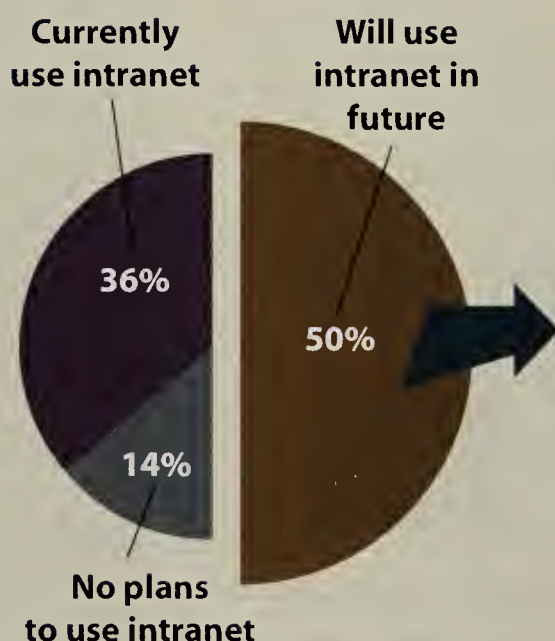
Making.

Trendlines

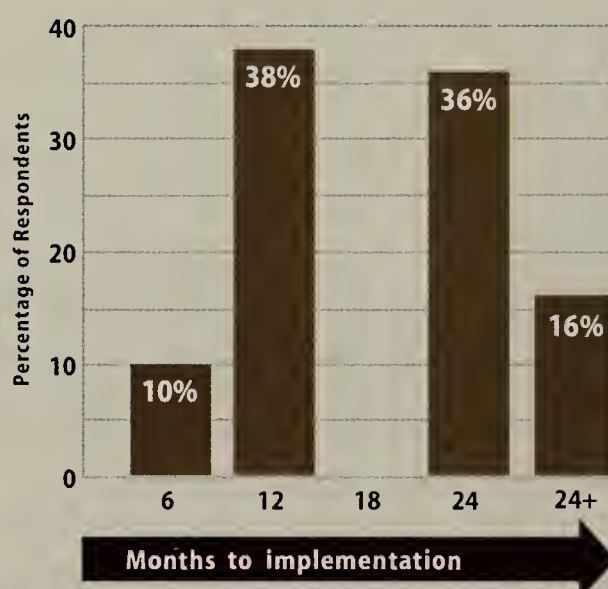
Intraspection

More than one-third of respondents indicate they currently use intranets to distribute multimedia-based training. Among the 50 percent who plan future usage, the majority (84 percent) expect to use intranets within one or two years.

Intranet use for multimedia-based learning



Timeline for those who plan to use intranets for multimedia applications



SOURCE: OMNITECH CONSULTING GROUP INC.

with PCs and ISDN lines at school and home. Bell Atlantic spent a "staggering amount of money" to study how computers and telecommunications could fit into an educational curriculum, says Tim Ireland, a public relations representative from Bell Atlantic-New Jersey Inc. "We discovered that, if teachers have constant contact with students and parents via computer e-mail, students' test scores go up," Ireland says. "Students are more engaged in school, and parents are more involved. In addition, if kids have to communicate using computers, they learn to write very well. Writing becomes the preferred method of communication for kids, instead of an odious task."

Now in 10th grade, the students took their computers with them when they moved to Emerson High School. The project will conclude when they graduate in 1997, but its effects will be felt long afterward. Emerson is wiring 40

"Just plain information is about as useful as a Smithsonian full of phone books."

—Hans Eisenbeis
Suck magazine

classrooms to an Ethernet backbone so students can work on the same project as they go from class to class, says Emerson's assistant principal, Bill Dorsett. The teachers use e-mail to communicate and assign projects that require online research. Students without computers use the school's or share with their peers.

Many of the students in the project are now on the honors track, says Dorsett. ■

Smooth Moves

CLIENT/SERVER UPGRADES

Congratulations—you've finished rolling out your new client/server architecture. Distributed databases, legacy systems, middleware, server and desktop operating systems, and custom front-end applications are all neatly in place. Unfortunately, those laurels you're resting on may turn into briars when it comes time for an upgrade.

Updating even one software element in the patchwork client/server environment raises many thorny issues. Cost and training are certainly concerns, but even scratchier is compatibility—making sure the new network operating system version supports the rickety database running on the back end and won't conflict with the forthcoming release of video server software planned for next quarter. A change at the server can ripple through the process and cause a compatibility problem farther down the chain. And testing one upgrade after another can sap valuable time from the IS department. More and more companies are avoiding this thicket of trouble by rolling out multiple software upgrades together in what are called "coordinated releases."

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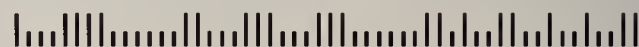
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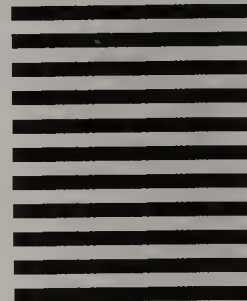
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Trendlines

The Vanguard Group Inc., based in Valley Forge, Pa., the coordinated release system has simplified maintenance of a complex client/server environment. Customer service reps require access to a variety of databases that contain fund information, up-to-date performance data, correspondence records and images of client transaction paperwork. The client/server applications are plugged into mainframe applications, which are also connected. Upgrades used to be a nightmare. But in the past few months, the company has been in the process of migrating from OS/2 to NT 3.51 and upgrading Windows 3.1 to Windows 95 on the desktop, while also upgrading to Lotus Notes 4.1. "We've moved in the direction of packaging updates, doing major releases less often with more planning and coordi-

nation," says Joanne Voelcker, vice president of technology. "This approach has been a major improvement to network service and to ensuring high availability of our mission-critical network."

That puts Vanguard with the pack. "The majority of our clients are moving into planning for these things strategically," says F. William Hoffman, managing partner of the Global Systems Solutions Centre at Price Waterhouse LLC in Bethesda, Md. Hoffman recommends a release cycle for corporate computing environments that is "closer to a year than a month."

Hoffman also notes that these long-term plans will put additional pressure on software vendors to clearly state future product directions.

—Derek Slater



Who's Buying?

BATTLE OF THE SEXES News flash from the National Foundation for Women Business Owners: Women and men shop differently.

The foundation found that, though female business owners are just as likely as their male counterparts to invest in IT for their companies, they approach the purchase differently. According to a NFWBO survey of 1,097 company owners, female owners place much more emphasis on service, price and vendor reputation and experience than do men. For example, almost 80 percent of female business owners surveyed said they value a tech-supported 24-hour helpline, as opposed to only 63 percent of their male peers.

While such differences may seem minor, or perhaps obvious, more and more vendors (such as IBM Corp.) are tailoring marketing schemes to the gender of the business owners.

"Many of the older, more traditional marketing techniques are geared to reach an audience that was once predominantly male," says Cherie Piebes, IBM national executive for women- and minority-owned businesses. "Today, almost 40 percent of U.S. firms are owned by women, and many of the long-standing marketing techniques won't work with this group." ■

IT in Action

Use of advanced information technologies in Fortune 1000 companies

Technology	Projects Affected	Success Rate of Projects	Overall Effective Usage
Structured methods	82%	87%	71.3%
RDBMS	64	92	58.9
PC/workstation-based development	53	91	48.2
Client/Server	40	88	35.2
Data warehouse	20	84	16.8
OO/OOPS*	12	74	8.9
Internet	6	87	5.2

*Object-oriented/object-oriented programming system

SOURCE: RESPONSES FROM 76 COMPANIES SURVEYED IN SYSTEMS DEVELOPMENT INC.'S "SURVEY OF ADVANCED TECHNOLOGY—1996"

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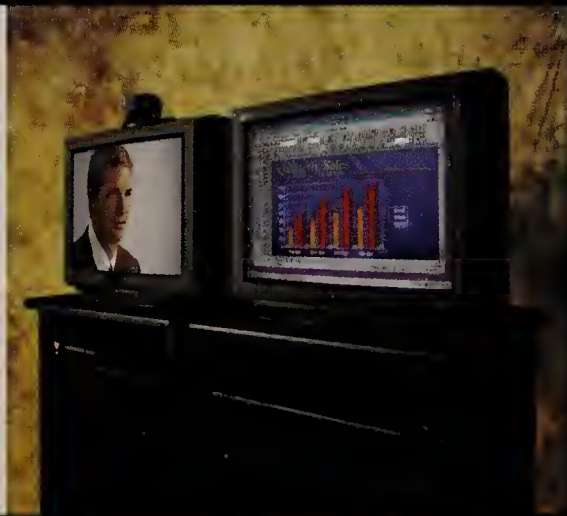
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Delicate Negotiations

Hammering out agreements with your staff, peers and bosses doesn't have to be a fight if you know how to bargain well

BY MARGARET A. NEALE

WHETHER YOU'RE A project manager sandwiched between a functional area boss and the staff members you "oversee" or a CIO lobbying business unit managers, you're likely to find yourself trying to sway people over whom you have no formal authority. Negotiation may be the best tool managers have to get people to do what needs to be done—short of outright bribery, of course.

Most people tend to think of negotiation as a contest between adversaries, a situation in which one side must win completely and the other must lose everything. Fight hard, concede nothing—or as little as possible. While that might be true of negotiation that occurs while haggling over the price of a car or between corporations and unions (each with high-priced, tenacious lawyers on retainer), in the typical workplace negotiation is more about give-and-take than winner-take-all.

Negotiation can satisfy *both* parties, leaving everyone involved better off. If it's handled well, it can be a process in which the parties decide together what each will give and take in a long-term relationship, whether that relationship is between peers or bosses and subordinates.

Of course, that exchange can be particularly tricky to manage when multiple parties are involved or lines of authority are unclear. At one organization I was involved with, for

example, a project team leader had to manage two subordinates over whom he had no direct authority and whose differing work styles caused constant friction between them. He could not say "you *will* work together" although collaboration between "Joe" and "Bob" was necessary for the success of the project. His strategy was to form a three-way negotiation.

As a result, the manager learned that Bob felt he had a lot of responsibility but had no way to check progress reports on Joe's performance, so he had begun stopping by Joe's cube several times a day. But Joe viewed Bob's actions as snooping and felt Bob was

setting him up to take the fall should the project go awry. So the project manager simply set up a structure where enough information flowed from Joe to Bob to make Bob comfortable.

However, given the tension between Joe and Bob, the project manager served as an intermediary, limiting (early on) the amount of interaction between Joe and Bob. In this case the manager needed good negotiation skills to figure out the cause of the problem and how to ease interaction between the two. As a result, Joe was able to get more autonomy and resources. His team had been getting squirrely from working weekends, but Joe hadn't wanted to approach Bob or the project manager because he felt he was under the gun. With these changes, Joe was able to structure the work for the people on his team so that they could get the project in on time and within budget.

One of the first steps toward better negotiations (and the one most people are least inclined to take) is to set aside the fear of conflict. People tend to interpret conflicts as personal attacks, which prevents them from engaging



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Executive Counsel

in constructive debate that airs divergent opinion about how to get the job done. Instead, they try to act like members of one big happy team in complete agreement. And that turns out to be deadly for organizations because you can be so blithely cooperative that you wind up leaping over a cliff together.

Another crucial step toward negotiating successfully is to understand what you want—and not in an “I want it all” kind of way, but in a way that prioritizes what is most important to you and what is OK to sacrifice. Spend some time trying to understand your “opponents” and their interests and priorities. Managers often mistakenly think, “What I want is what they want.” And that’s just not always true. A better approach might be, “Why should they want to do what I want them to do? What’s in it for them?”

Once you have considered both sides, you look for overlap. So in the case of Bob and Joe, for instance, Bob was much more concerned with meeting deadlines than with checking in daily with Joe, while Joe was more concerned with feeling trusted and being able to direct his team than he was with keeping information to himself. Their compromise allowed each to get what he *really* wanted while giving up something that annoyed the heck out of the other.

Negotiating with Your Staff

What happens during negotiations, especially when there’s a power differential, is that subordinates try a tactic best described as “let me try to figure out what the manager wants and then suggest that option.” That creates the worst of all worlds. First, as a manager you’re wasting time—you already have your own ideas. And second, you’re forcing your subordinates to spend most of their time thinking not about what’s best but rather about what’s politically advantageous for them.

In the end, you lose. Making all the decisions as a supervisor is fine—as long as you have all the answers. But people will become very hesitant to speak up if they get punished for not having the “right” answer—that is, the one the supervisor wants to hear. And they won’t confront you when they have a difference of opinion. That’s dangerous because your knowledge base as a superior can

become dated quite quickly.

One strategy you can use is to withhold your perspective. Ask what your subordinates think before you blurt out your own opinion. They will have to come up with their own, hopefully honest, take on the problem. Fostering this kind of honesty is not easy, and it has more to do with your ongoing efforts to manage than specific negotiation tactics. Simply put, if your negotiations with employees typically don’t go well, then you don’t know your employees well enough. Do you know what they value? What motivates them? How they respond to the demands that you make of them? What their professional and personal goals are? If you don’t prove you care about the answers to these questions, you aren’t going to be so effective as a negotiator.

Negotiating with Your Boss

When you negotiate with your superiors, you need to avoid the falling prey to the “emperor’s new clothes” syndrome—giving the very response you’re trying to avoid getting from your own staff.

On the other hand, voicing disagreement to your CEO or CFO can be tricky. If they get defensive, just as you yourself might, they will tend to put the most negative spin on your actions. For instance, if you tell your supervisor, “I think we’re headed the wrong way on this” he may read it as, “This slacker just doesn’t want to do the work.”

One way to combat such misperception is to preface your dismay with comments that refer to your common concerns. For example, both Bob and Joe were careful to let their project manager know that they both wanted the project to be finished on time and well—their dedication to the team’s goals was not the issue, the specifics of team functioning was. You want to state your arguments in a way that emphasizes your concern for the welfare of the project and de-emphasizes your dissent. So lead with “I’m worried about the effect of X on the team’s morale,” rather than dissent outside that context. You want to come off as a patriot.

It’s not necessary that everyone always agree with you. But your superiors should at least listen. You may have thought of something that the other person didn’t—

Majority Doesn’t Rule

An option might get the most votes and still not be the best choice

LIKE WORKING in a kitchen with too many cooks, trying to negotiate with a lot of people who have divergent views can lead to some bad soup outcomes. The more views mixed in to spice up the negotiation, the harder it is to agree on the flavor of anything. Even determining when an agreement has been reached can be difficult.

Groups usually rely on majority rule to make decisions in such situations. But that can be a serious mistake for two reasons: First, it assigns an equal vote to every person, though all may not feel equally passionate about the outcome. Second, it devalues (or just plain ignores) potentially important reasons behind a minority vote. Once enough people vote for one side, listening to the reasoning of those who voted the other way seems unnecessary. But without airing that information, it’s harder to forge an agreement that integrates differences instead of dismissing them.

The better way to go is to require consensus. To reach a unanimous agreement, each party has to make trade-offs. While it can be time-consuming, the outcome should be a lot tastier.

ADAPTED FROM *NEGOTIATING RATIONALLY* BY MAX H. BAZERMAN AND MARGARET A. NEALE (THE FREE PRESS, 1992)

and that might change his or her mind. And you need to remember that when the situation is flip-flopped and you’re the one with the position and pull. 

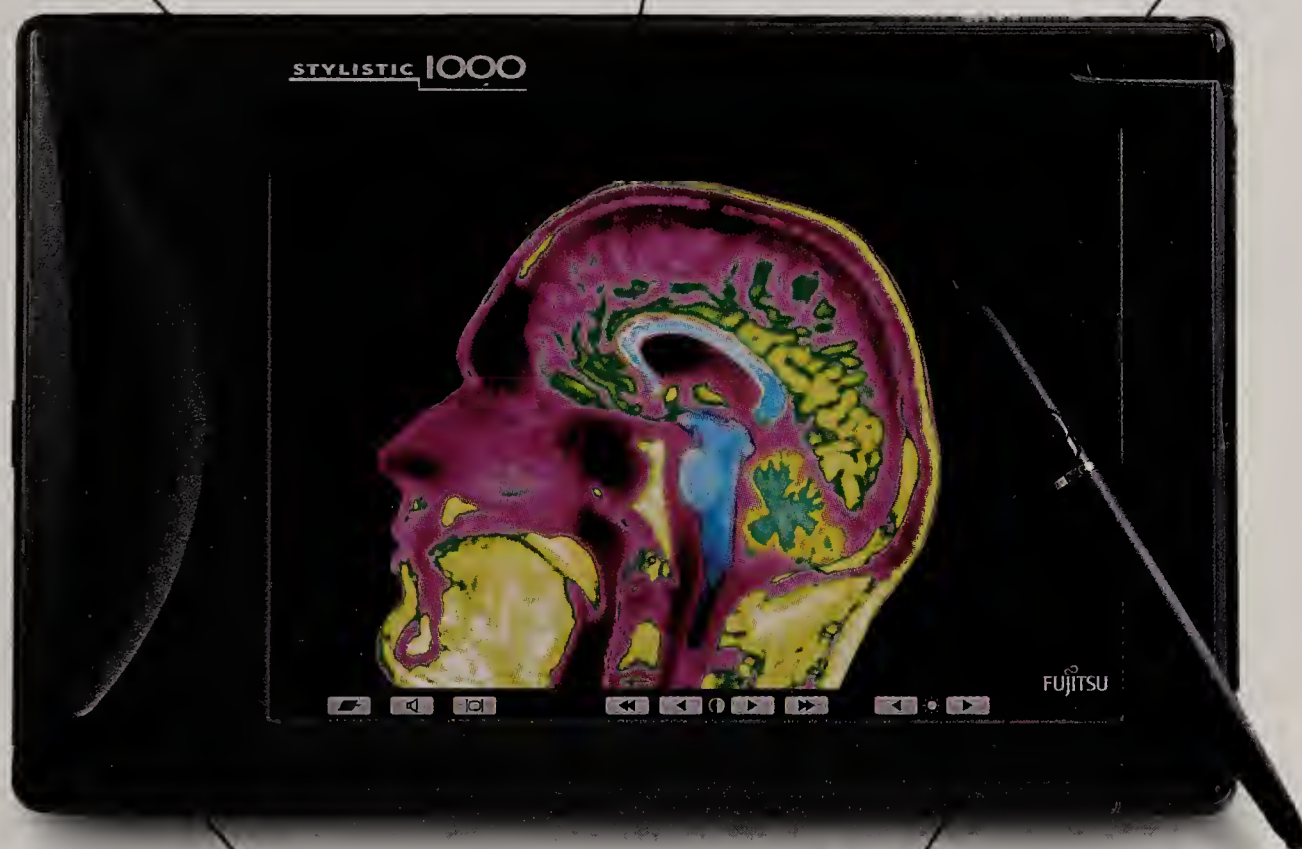
Margaret A. Neale is a professor of organization behavior at Stanford University Graduate School of Business and the director of the Negotiation and Influence Strategies and Advanced Negotiation Program at Stanford University.

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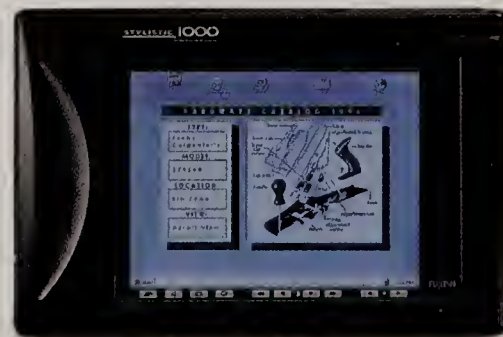
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The Skills That Thrill

Tracking employee competencies can help companies recruit, match people to jobs and even develop their staffs

PEOPLE ARE ONE OF THE business world's most important resources, so you would think we would be partial to them. But when it comes to computer-related issues, we don't pay nearly as much attention to people as we do to money and hardware. While we know a great deal about our companies' financial and physical assets, we know very little about their human assets. Of course, payroll has always been with us—in fact, in 1952 General Electric's appliance business payroll became the first business application of IT—and for years companies have kept automated records on benefits and insurance. But keeping track of how much people are paid and perked is hardly the most noble of potential HR applications.

Increasingly, though, companies are moving toward a greater appreciation for human resource information. They are getting serious about applications that will help them assess skills, match people to jobs, and monitor employees' growth.

Computers have always been good at matching demand and supply, so using IT to find people with the right skills for a particular job seems like a no-brainer. But it's a lot harder than it looks. I first realized just how difficult it is in 1990 when I joined a consulting firm that used a skills database to staff projects based on the expertise of consultants. At that time I considered my own skills to be in reengineering, IT-enabled organizational change and IT strategy.

While I was completing the skills questionnaire for entry into the database, I realized that none of my skills were mentioned! Clearly what I could do was not valued by the firm. So I checked off a few skills at which I was at best mediocre (a skill level with no checkbox), including focus programming, benchmarking and VM capacity planning. Of course, reengineering eventually made the questionnaire, but not until 1994 when I was on my way out of the organization. By then I was focusing on knowledge management, and you can bet that no skill by that name graced the list. As you probably guessed, projects in this firm were staffed based on personal networks more than the skills database.

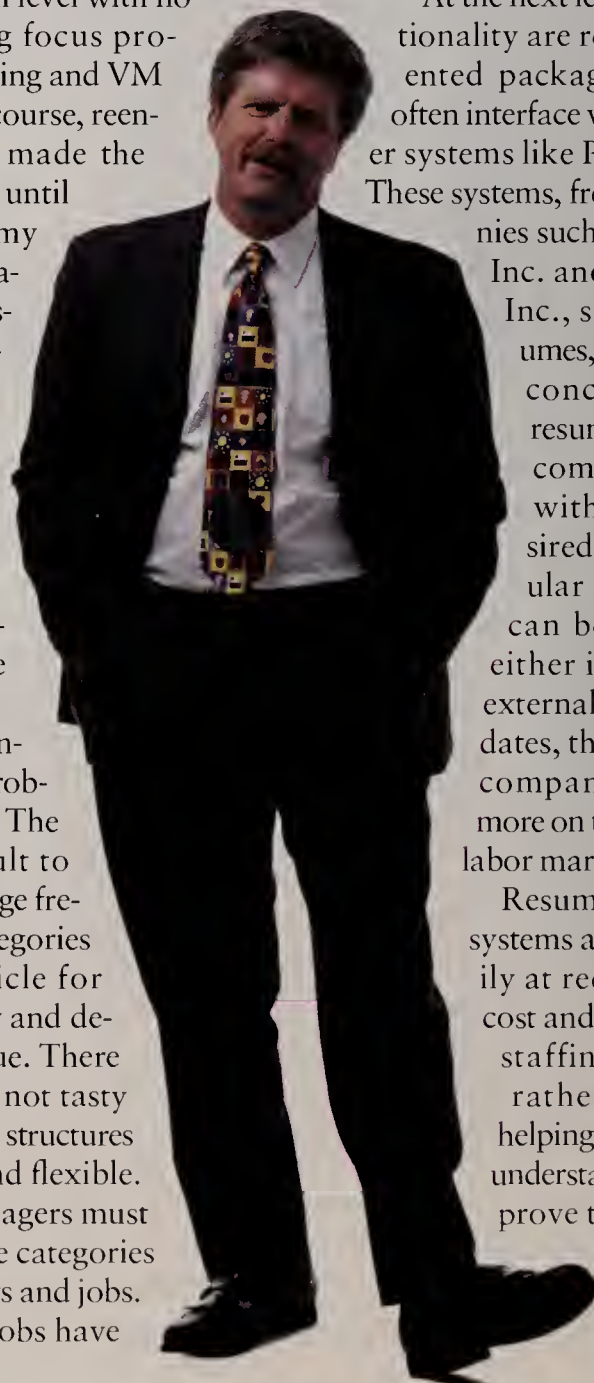
Later I realized I'd encountered a common problem with skill systems: The categories are difficult to establish and they change frequently. Since skill categories are the primary vehicle for matching labor supply and demand, that is a big issue. There is a cure for it, but it's not tasty medicine. Skill category structures need to be complex and flexible. Both HR and line managers must constantly monitor the categories used for both applicants and jobs. And, those who seek jobs have

to change their profiles regularly.

With those sobering verities in mind, let's review the current offerings of vendors of skill systems and one ambitious internal proprietary system from Microsoft Corp. At the lowest level of functionality, general HR packages from PeopleSoft Inc. have a limited ability to store information on both employees' skills and skills required for particular positions. Because these broad packages typically are used for payroll as well, companies can link compensation to competencies. But the skill categories are simple and generic, and few companies take advantage of them.

At the next level of functionality are resume-oriented packages, which often interface with broader systems like PeopleSoft. These systems, from companies such as Restrac Inc. and Resumix Inc., scan in resumes, extract key concepts from resume text and compare them with traits desired for particular jobs. They can be used for either internal or external job candidates, though most companies focus more on the external labor market.

Resume-oriented systems aim primarily at reducing the cost and time of the staffing process, rather than at helping companies understand and improve the competencies of employees.



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Think Tank

The skill categories, while better than those used in general HR systems, are still limited and generic. For understanding applicants' abilities, the concept analysis and search capabilities of these systems are only a starting point. Some of the systems now allow line managers to search and browse through the applicant databases directly rather than go through the HR function.

Some smaller vendors are attacking the competence issue directly by producing systems that are oriented to specific skill domains, notably IT. For example, Success Factor Systems has a tool that allows companies to specify factors that contribute to IS's success, such as knowledge, skills, potential and behaviors, and to then match jobs and people based on those factors. Within the IS function, a program called SkillView from SkillView Technologies Inc. lets employees, supervisors, peers or clients evaluate around 300 IT-related skills.

The problem with packages, however, is that they usually don't allow for a

company-specific skill set. If a company is truly serious about skills and staffing, it should either develop its own skill categories and put them into a database or buy a very flexible package.

MICROSOFT IS a company that has always been serious about those human resources issues. It goes to extraordinary lengths to hire people with strong intellects and capabilities. Microsoft's internal IT group faces the same pressures to produce software and to adapt to rapid industry change as its product developers. If Microsoft's product set includes object linking and embedding technology, for example, then the IS group must master that skill and incorporate it into internal systems.

For that reason, the IS group has focused on identifying and maintaining knowledge competencies. Susan Conway, a program manager in Microsoft's IS learning and communication resources group, is leading a project to take on that

issue by creating an online competency profile for jobs and employees within Microsoft IS. A successful 1995 pilot project in an application development group led to full implementation of the system throughout Microsoft IS. The project, called "Skills Planning und Development" (or SPUD), focuses not just on entry-level competencies, but also on those needed to stay on the leading edge of the workplace.

The project objective is to match employees with appropriate jobs and work-team priorities. Once Microsoft's IS employees have a better understanding of what competencies are required of them, it follows that they will be better consumers of educational offerings inside and outside Microsoft. Eventually, the project may be extended throughout Microsoft and into other companies.

The five major components of the project are the following:

- **developing a structure** of competency types and levels;



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squeezed so hard to get control over spending and achieve business-driven solutions instead of just high-tech fashion shows. ¶ As a multi-billion dollar worldwide provider of technology management services, Inacom uses a tough, business-driven approach to managing distributed technology

- **defining the skills** required for particular jobs;
- **rating the performance** of individual employees in particular jobs according to skills;
- **implementing the skills** in an online system;
- **linking the competency** model to educational opportunities.

Entry-level competencies are called "foundation knowledge" in the SPUD project model. Above the foundation level are local or unique competencies, which are advanced skills that apply to a particular job type. A network analyst, for example, might need a fault diagnosis competency for LANs. The next level of competencies are global, and all employees within a particular function or organization would have them. Every worker in the controller organization, for example, would be competent in financial analysis; every IS employee would be competent in technology architectures. The highest level in the competency struc-

ture is universal competencies for all company employees, such as knowledge of the company's field, its products and the industry drivers.

Within each of those four competency types are two separate skill categories: explicit, which involves expertise in specific tools or methods, like Excel or SQL 6.0, and changes frequently with the marketplace; and implicit, such as requirements definition, which involves abstract thinking and reasoning skills. Each skill level for each competency is described in the database in several bullet points, making them easy to measure.

A manager can rate each job in Microsoft IT according to the 20 to 60 competencies required to do it successfully. Managers also may evaluate workers in terms of the competencies they exhibit.

The employee rating process is building an online competency inventory that will be accessible across Microsoft. A manager assembling a team for a new project could ask the online system for

the top five candidates with high skill levels in 80 percent of the required competencies who are based in Redmond, Wash. The system now resides on a relational database, but is being moved onto an SQL Server with a Web front end for easy intranet access.

No generic package could be as tailored to Microsoft's skill environment. The SPUD system is complex and places substantial demands on its HR and line IS managers. But remember, this is a necessary condition for skill systems success. You get out of these efforts what you put into them, and nobody (except vendors) said it would be easy. We've worked on financial systems for 40 years, so we have plenty of catching up to do on the people side. **CIO**

Thomas H. Davenport is a professor and director of the Information Management Program at the University of Texas at Austin. He welcomes reader comments at Tdav@notes.bus.utexas.edu.

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GETTING IN

It's 9 a.m. Monday in Palo Alto, Calif., and Hewlett-Packard Co. is primed to roll out a new companywide word processing application. But first there are some last-minute details. Brandt Faatz, Fort Collins, Colo.-based head of HP's PC common operating environment team, calls his key players in the United States, Europe and Asia. Together they iron out the final bugs of the rollout and post a synopsis of their discussion on the World Wide Web, alerting thousands of HP employees to the pending upgrade. By 5 p.m., the new software is loaded onto a master server in Palo Alto and from there is transmitted globally to 400 file servers, which in turn distribute the software to more than 100,000 HP desktops worldwide. By 5 p.m. Wednesday—just 48 hours later—the rollout is complete.

BY TOM FIELD

That scenario is representative of how HP's corporate IS department typically distributes software globally. A 48-hour, 100,000-user rollout is routine and just one example of how IS maximizes its use of HP's 8-year-old global intranet—a TCP/IP-based information system that uses Internet technology for internal data transmission and communication. Since the system's inception in 1989—long before “Internet” was a household term and “intranet” was even conceived—HP's IS department has used the network for global electronic communication, software distribution, personnel training and document management,

Reader ROI

IN THIS CASE STUDY, Hewlett-Packard, a leader in leveraging intranets, demonstrates how its IS group uses an intranet to cut costs and enhance:

- ▶ PC software distribution and support
- ▶ staff training
- ▶ worldwide collaboration
- ▶ its reputation as an innovator

PHOTO BY DAVID POWERS

When Hewlett-Packard's corporate IS group began improving



TOUCH WITH YOUR INNER WEB

Robert Walker is at the helm of HP's intranet, which pumps roughly 7 terabytes of information a month throughout the company.

its own services via an intranet, the rest of the company couldn't help but notice



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INTRANETS

and to create distributed teams. By doing so, IS not only better fulfills its traditional missions, it positions itself as a proving ground for corporatewide intranet uses.

More than two-thirds of Fortune 1000 companies have developed or are developing corporate intranets—and HP's is among the most advanced, according to Forrester Research Inc. of Cambridge, Mass. "HP is doing what other people would *like* to do," says Paul Callahan, an analyst with Forrester. HP confirms that a successful intranet can give a company competitive advantage by streamlining its business processes as well as boost the status of IS, Callahan says. "For the first time, really," he says, "companies are going to be able to point to IS and say, 'You helped put us on the map.'"

"The intranet allows us, in a lot of ways, to do things we've always wanted to do," says Robert R. Walker, vice president and CIO. "It allows us to share the knowledge that's inside people's heads and suggest to other departments ways they can do things differently, using the technology available."

Walker's constituency has taken note and is beginning to see IS in a new light. "In the past, IS was sort of built into the walls," says Greg Mihran, director of HP's global account sales programs in

Cupertino, Calif., which now uses the intranet to track product development and sales worldwide. "Now they're viewed as helping us solve problems and giving us tools to anticipate future problems. They're much more visible."

That the intranet has generated significant savings both inspires recognition and creates momentum for the network. For starters, converting to relatively inexpensive TCP/IP (the Internet's protocol) from an old, X.25-based network saved countless annual operating dollars—the cost of operating the TCP/IP network is one-fifth that of the old network, Walker says. The single network has allowed IS to trim its 150 worldwide data centers to eight. A recent audit of HP's 1,200-seat worldwide customer support organization shows that configuring PCs via the intranet—that is, software distribution, installation and technical support—has saved \$2,000 per PC each year.

In the Beginning

"Global is us" is how Walker describes HP, founded domestically in 1939 and later established as a major high-tech manufacturer in Europe and Asia. But it wasn't until 1989, after FedEx and fax machines sped up the revolutions of the business world, that HP saw the need to link its global operations and improve its time to market. "We wanted to be able to place an [external customer's] order from anywhere in the world and send that order automatically to the factory that would deliver the product," Walker says. "To do so, we needed a common infrastructure."

It wasn't the first time HP sought to develop such a network. In the '70s, the company experimented with paper and magnetic-tape transfers for order processing and then settled into an internal network based on an X.25 protocol that supported a first-generation e-mail application. In the early '80s, HP's research and development lab took a cue from the military and academic establishments and began experimenting with Internet technology. By 1989, IS saw the potential benefits of creating its own version of the Internet to serve as a common, glob-

al communications platform. The group then converted its existing internal network from X.25 to TCP/IP and extended it to each of its IS department PCs, enabling extensive data interchange and availability of unstructured information. (In 1995, adoption of Netscape Communications Corp.'s graphical user interface gave this text-based information a graphical makeover.) When the network proved successful, IS propagated it throughout HP to run the new customer order-processing application and companywide e-mail system. "We called it, at the time, the HP Internet, which since has caused no end of confusion," Walker says. "Then, after setting it up, we said, 'We have this connection; what else can we build into it?'"

If it sounds like HP's infrastructure was a few beats ahead of its application plans, it's because it was. The company's advice to budding intranet builders is to follow the same path. "You've got to be willing to invest in infrastructure before you know in any level of detail how it's going to be used," says Charles G. Sieloff, manager of IS services and technology. "We didn't know exactly how we would use our network; we just instinctively knew this was a capability that our company would need and that our people would find ways to use it to make their [work] more effective."

Inner Workings

Once HP's first networked order-processing application was up and running, IS



Brandt Faatz leads intercontinental team meetings over HP's intranet from his desktop in Colorado.



Greg Mihran uses HP's intranet to track product development and sales worldwide.



looked inward and found it could use the intranet to tackle its own problems, including what had become a major challenge: desktop anarchy. It seems the IS staff's PC users took the term "PC" literally. "They considered them *their* personal computers," Walker says. "They were doing their own maintenance, loading their own software. Some were hooked into the network; some weren't." So HP formed the Common Operating Environment (COE) team to establish a set of desktop standards—configurations, information and applications—that

could be rolled out via the intranet and administered from HP's master server. The desktop management experiment was so successful in taming PC anarchy within IS that HP expanded it throughout the company to more than 100,000 desktops, including PCs and Unix workstations.

In addition to distributing upgrades and common tools, IS uses the intranet for technical support, whereby engineers at central sites worldwide can diagnose and often correct desktop problems remotely. If a user encounters trouble with, say, a word processing application,



Charles Sieloff: "We didn't know exactly how we would use our network, but we knew our company would need it."

that user can dial up an online HP help desk technician who can access the user's desktop via the intranet and determine whether the glitch is in the hard drive or the application. If the problem can be solved by retransmitting the application or an aspect of the hard drive, then that, too, can be accomplished online. A technician won't be dispatched to the site until all intranet options have been exhausted. The greatest testament to HP's success with network-based desktop management is that the company has spun off an enterprise desktop management service to sell the same approach to other global businesses.

Early on, HP recognized the intranet's potential for document management. When policies and procedures were paper-bound, IS had to push those documents onto its own people, which often was unsuccessful because either there were not enough printed documents to go around or the documents were outdated. With the intranet, documents are loaded onto a network repository, updated as required and pulled down as needed by employees. HP's human resources department has adopted that same intranet publishing practice to transmit and store employees' personnel information.

The intranet also has influenced IS staff training. Before the intranet, the

THE TECHNICAL

CONNECTION

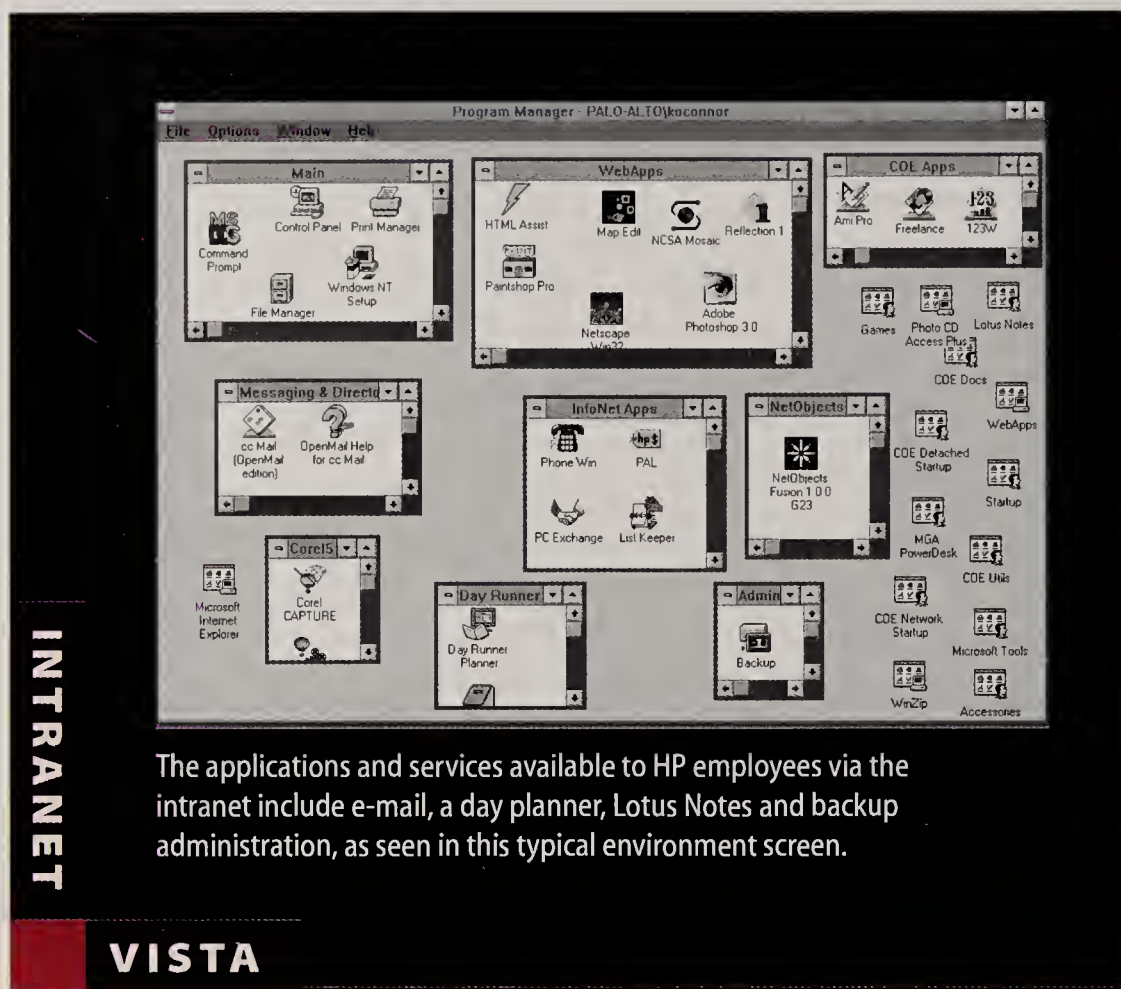
NOW The core of Hewlett-Packard Co.'s intranet—essentially a client/server, data-oriented network—is a 21-node, global WAN composed of HP server hubs that are interconnected worldwide by 64Kbps T1 and T3 lines. Each server node is connected to at least two other nodes for backup and redundancy. Those nodes serve what HP calls the backbone of its system: 100Mbps fiber-optic data distribution interface (FDDI) networks that originate in each of HP's buildings and transmit data to local workgroups of 10 to 100 desktop PCs. The PCs are connected to the FDDI network by either shared or switched 10Mbps Ethernet cable. Cisco routers route the data over the TCP/IP network.

LATER By the year 2000, HP hopes to recast its intranet as a peer-to-peer, multimedia network that supports video and 3-D graphics. Banking on asynchronous transfer mode (ATM) technology coming of age, HP plans to interconnect its nodes via 1.5Mbps to 155Mbps ATM or sub-T1 frame relay; the backbone connection will be switched 100Base-T or gigabit Ethernet or ATM (155Mbps to 2.4Gbps); and workgroups will be connected by 100Base-T or 155Mbps ATM.

—T. Field

standard was classroom instruction, which required employees from disparate locations to free their schedules for significant blocks of time and meet at specific locales—a major hassle at best. Now the IS staff is brought up to speed through intranet-delivered courses. Not only is that system more convenient, it lets management track the training material's effectiveness—if no one is downloading a particular training program, then it likely is not meeting their needs. That practice, too, has spread outside IS. Sieloff, manager of the IS group that administers training, estimates that 1,000 HP business users per month take advantage of online learning opportunities.

The intranet has made IS's life easier by unifying the department's 6,000 worldwide employees. Before 1989, HP's decentralized IS structure incorporated company headquarters in Palo Alto and many independent IS departments worldwide, each of them responsible for its own on-site IT upkeep. True global teamwork wasn't possible, and IS employees who wanted to advance into upper management generally had to relocate to Palo Alto. Now, by communicating electronically in real-time, geographically dispersed employees have more equal say and opportunity within IS. "One-third of my organization is



The applications and services available to HP employees via the intranet include e-mail, a day planner, Lotus Notes and backup administration, as seen in this typical environment screen.

located elsewhere, at eight or nine sites around the world," says Palo Alto-based Sieloff. "The network has allowed us to get a tremendous amount of participation and buy-in from people who don't have to—and in many cases don't want to—live in California."

The intranet also supports IS's distributed teamwork. The COE team, for example, seldom meets physically but does work together electronically. Once a week, the team's members meet via teleconference to discuss current desktop-standards issues; they distribute the minutes via e-mail over the intranet to all COE members and IS managers. Beyond meetings, they share documents via the intranet, using Lotus Development Corp.'s Notes and Web pages to collaborate regularly on problem-solving issues. A COE Web site gives members and nonmembers access to current COE issues, white papers and implementation schedules.

The intranet has spawned several unintended but useful benefits as well. Among them are a petty cash reimbursement system that allows employees to report and be reimbursed for expenses electronically and an employee review system that lets managers conduct wage reviews for remote employees. Such applications, tested in IS before being

shared throughout HP, have fostered a corporate appreciation for the intranet. "No one would ever roll out a universal LAN just for petty cash reimbursement," Walker says, "but once you have that infrastructure in place, there are dozens of little applications you can develop."

Information Overload

No global application comes without a world of headaches, and the HP intranet has brought its share. The pure scale of constructing a global network is one example. Initially, HP rewired each of its buildings for TCP/IP—an enormous capital undertaking. Now that the configuration is included in the construction cost of new buildings, the physical challenge has shifted to the developing areas of the world, where telecommunications infrastructures are less sophisticated. Some HP branches in Eastern Europe, for instance, remain connected via X.25, while HP has relied on joint venture partners to help set up the network in parts of Asia. Security, too, is an issue. HP has responded by maintaining firewalls to keep external trespassers out of the intranet.

But some of the biggest hurdles are people issues. "Connection brings tensions," says Sieloff. The intranet made

people both in and outside IS feel pressure to shift attention away from their immediate projects to share their work experiences with remote co-workers. Compounding the problem is the risk of employees being overwhelmed by the sheer amount of material available on the intranet—over 1 million documents and counting.

As a result, IS is exploring ways to make intranet information more "digestible" so that users will find it easier to access and contribute information. One possibility, Walker says, is for HP to create a new IS role combining the skills of a journalist, librarian and publicist to sift through intranet material, polish it and put it into the proper context for end users. "In the era of the Web, everyone has become a writer," says Walker. "But now we need some editors." Some companies have met this need by hiring "corporate digital librarians" to help users make maximum use of their online resources (see "Out of the Stacks," Page 54).

The Future

No question, the IS department's greatest intranet challenge is extending the system. Telecommuting employees and strategic business partners want the same access that internal users enjoy. But that's no easy task in parts of the world where the telecommunications infrastructure can't support the necessary bandwidth. (Wireless technology may be HP's answer here.) The company also wants to upgrade the network to accommodate videoconferencing, but how much bandwidth would be necessary? "There is enough multimedia out there to chew up whatever bandwidth you give it," says Sieloff. "But do you get enough business value from delivering something like video on demand?"

While HP mulls over those technical concerns, it remains fixed on its ultimate objective: to make the network an integral part of the *entire* corporate culture. "We want to make maximum use of it in all of our business operations," Walker says. "Ideally, we want it to be so commonplace that it's viewed like a public utility—you only notice it when it's down." 

Staff Writer Tom Field can be reached at tfield@cio.com.

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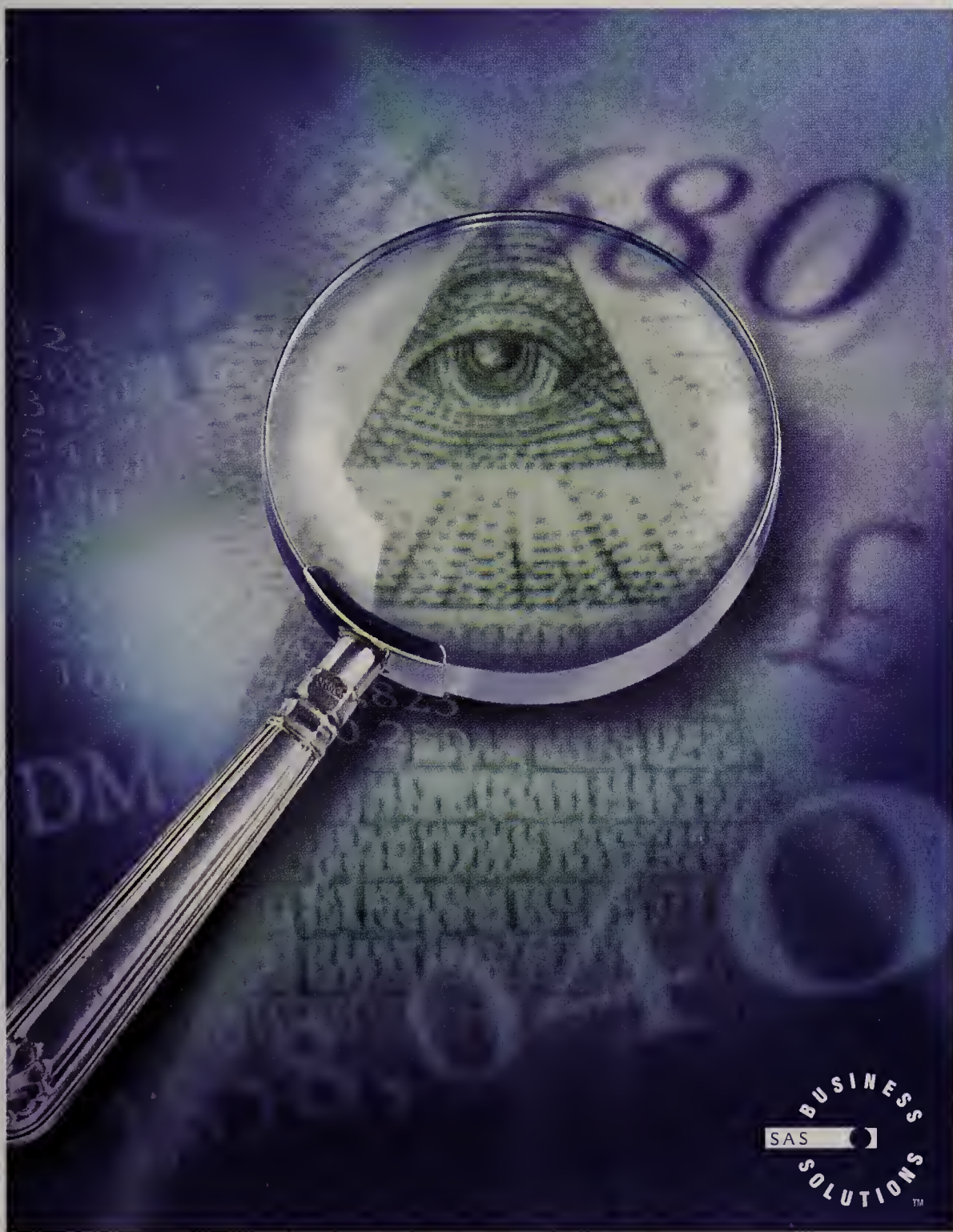
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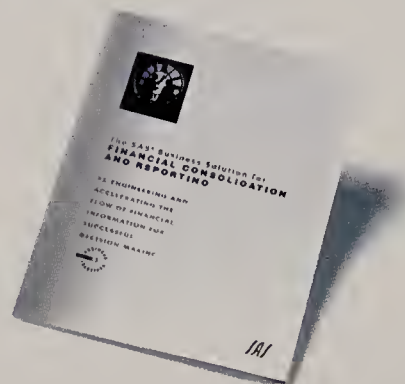
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A man in a dark suit, light blue shirt, and patterned tie stands with his arms crossed in a server room. He is smiling slightly. The background is filled with server racks and glowing blue lights. The overall tone is professional and tech-oriented.

John Danielsen: *Putting in the time to work with vendors can “pay off immensely.”*

Reader ROI

YOU DON'T HAVE TO BE IN the Fortune 500 to influence a vendor's direction and policies. Participating in industry groups and beta test programs as well as cultivating personal relationships are among the many techniques a CIO can use. In this article, you'll learn how to get vendors to meet your needs.

Powers *of* Persuasion

Don't hesitate to put the squeeze on your suppliers. Influencing vendors to satisfy corporate needs is simply good business.

BY MIRYAM WILLIAMSON

WHEN MCDONALD'S wanted to build a custom, point-of-sale solution, it meant persuading certain best-of-breed vendors that they, too, deserved a break today. A break in their proprietary POS products, that is. Carl Dill, senior vice president of IS at McDonald's Corp. in Oak Brook, Ill., convinced three key vendors to unbundle their proprietary systems and act as systems integrators, essentially changing their business models. In return, Dill arranged for the vendors to learn about the restaurant business, giving them a chance to enter an industry in which

some previously had not had a presence. Since there were no big software development houses with products related to restaurant systems, Dill says, "we influenced our vendors to develop the next generation of systems based on our software, offering some financial support and teaching them what we need in our restaurants." With the exception of some proprietary features, the vendors will be able to sell the resulting products to McDonald's competitors as well. Similarly, Pacific Gas and Electric Co.'s John Danielsen wanted to change the licensing practices of the software vendors he dealt with, so he marshaled the

support of a group of IS executives. Danielsen, vice president of computer and telecommunications services at PG&E in San Francisco, also chairs Open User Recommended Solutions, a Chicago-based nonprofit organization that brings together users, vendors and service providers to promote new ideas for enterprise management of IS. He spearheaded an OURS task force that formulated guidelines for standard software licensing in areas such as the right to use, charges, compliance and law. Says Danielsen, "It used to take a substantial group of contract administrators and attorneys to work on the wide variety of contracts that our vendors wanted us to sign. The task force guidelines have made it easier to arrive at a contract. They have substantially reduced my costs for that function."

Dill and Danielsen are two IS executives among many who focus a portion of their efforts on influencing vendors in a variety of ways for a variety of purposes. Many CIOs help guide vendors' directions and priorities or suggest alliances among ven-

dors to reduce systems integration costs. Some influence support policies and the timing of new product releases, while others stimulate the creation of new products and services. Anything that can make a vendor's activities more advantageous to the company is a likely target for a CIO's persuasive tactics.

Gone are the days when a single vendor's hegemony over the mainframe market was so great that the vendor's sales representative made most of the customer's purchasing decisions. And the rising competitive temperature makes vendors all the more interested in hearing what customers and potential customers have to say. The balance of power is changing, says Dill. "There is a lot more power in the customer's hands than there was 10 years ago."

Keith Gnagey, vice president at American Management Systems in Fairfax, Va., agrees. "CIOs today have a greater chance of swaying the vendors they deal with than they did in the past," he says.

Obviously, vendors still make more of the prod-

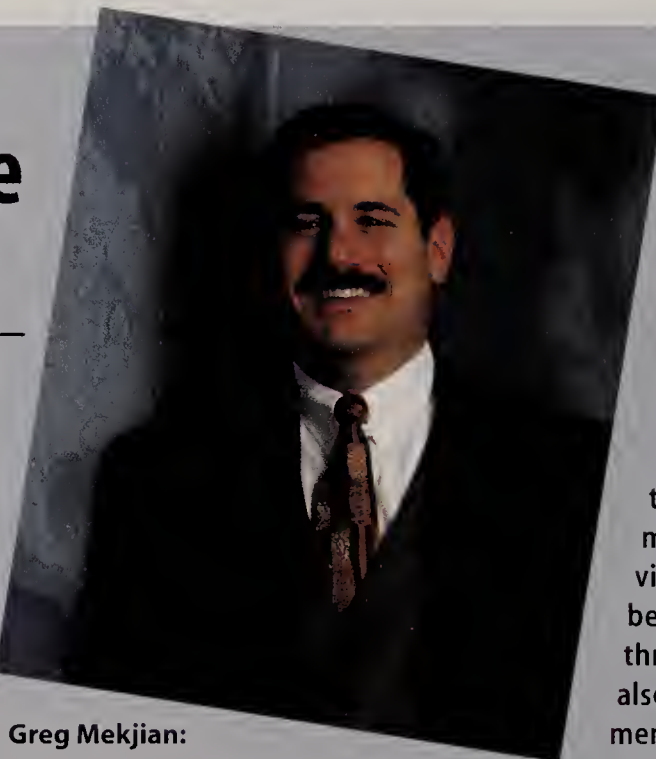
Circles of Influence

Here are three ways to get a customer's input to a vendor—and have it make a difference

VENDOR GROUPS. Many vendors sponsor or support user organizations as a channel for new product and service ideas, but SAP America Inc. in Wayne, Pa., is one of the few that solicits customer input. Since 1994, SAP America has established corporate centers in at least 10 industries to gather information on industry-specific issues. Its Industry Centers of Expertise (ICOEs) cover such industries as consumer products, utilities, high-technology, telecommunications, oil and gas, and pharmaceuticals.

The ICOEs are an arm of SAP that is staffed with people experienced in the industry with which they work. "When we are evaluating how our product will function in a specific industry environment, the ICOE staff is a conduit on behalf of the customer," says Greg Mekjian, director of the automotive ICOE in Detroit. "They establish priorities and present them to the developers."

The ICOEs also run focus groups to explore customers' needs and preferences.



Greg Mekjian:

Everybody wants to have influence over their vendors. Indeed, companies expect them to.

At a recent focus group, SAP America assembled members of the automotive and high-tech ICOEs to talk about industry trends and review simulations of the product design. "We aren't sitting in an ivory tower developing products and then expecting folks to use them," says Mekjian. "We are actually soliciting their influence."

USER GROUPS. At the opposite end of the spectrum from the vendor-centered group is Chicago-based Open User Recommended Solutions. Acknowledging

that the term "open" usually indicates a Unix orientation, OURS Chairman John Danielsen says that, in his organization, open stands for interoperability. "OURS is easier to say than IURS, and the word 'open' also connotes interoperability."

Typical OURS members are Fortune 500 companies. Participants meet with vendors and service providers to iron out issues and develop best practices, working largely through a series of task forces. OURS also holds three-day workshops for members twice a year, as well as one-day update and executive roundtable meetings with member CIOs and visiting experts.

STANDARD GROUPS. Executives can exercise influence through organizations devoted to setting standards, according to John Parkinson, chief technologist of the enterprise solutions group at Ernst & Young LLP in Irving, Texas. He adds that standards groups such as Object Management Group in Framingham, Mass., have a surprising amount of influence. "Over the last two or three years, strangely enough, they have become one of the best vehicles for shaping the decisions vendors make," he says.

—M. Williamson

uct decisions than their customers, says Julie Horkan Meringer, an analyst for leadership strategies at Forrester Research Inc. in Cambridge, Mass. "Among the Global 2000, I would say that vendors have the upper hand about 60 percent of the time," she says. "But there are smart CIOs out there who know how to work vendors to their benefit."

Indeed, companies *expect* their CIOs to have a hand in their suppliers' decisions. "Everybody wants to have influence over their vendors," says Greg Mekjian, director of the SAP Automotive Industry Center of Expertise in Detroit, an organization dedicated to linking the automobile industry and software vendor SAP. Mekjian notes that now some CIOs are being evaluated on how much influence they can exert.

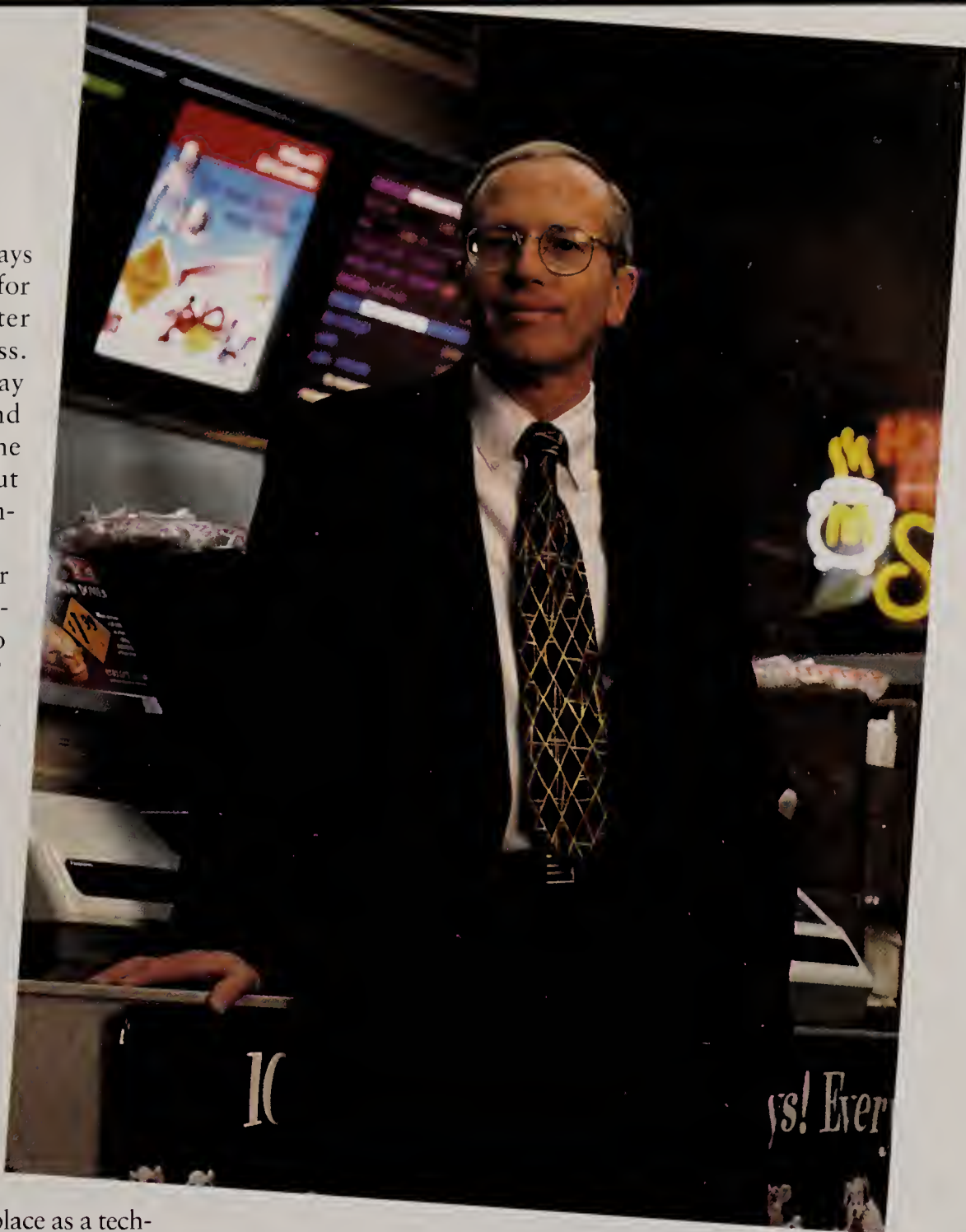
Some voice concern that innovation would be impeded if customers had more power over vendors' decisions than they do now. "Technology vendors are the ones that drive innovation," Meringer says. "If power ever shifted significantly in favor of the user, the U.S. might well lose its place as a technology leader. We would lose our position of power in the world marketplace." Nevertheless, she says, "vendors are actively seeking information from their customers, and it's not falling on deaf ears, except in cases where the vendors aren't going to do well."

CIOS TYPICALLY SPEND so much time cultivating the support of top management and "keeping the trains running on time," says Meringer, that they have little time left to influence vendors. "They listen to vendors in product meetings and hear about what the latest and greatest version is going to do for them," she says, but they often falter when it comes to asking penetrating questions.

And merely asking good questions is a form of influence. "If you're an educated buyer, you're going to know the right questions to ask," says Meringer. She suggests that CIOs should devote 8 to 10 percent of their time leading vendors in the right direction.

Here are five more ways CIOs can influence vendors:

1 On the way to the forum. Both Danielsen and Dill stress the value of participating in vendor-specific customer councils and industry groups that



Carl Dill: "There is a lot more power in the customer's hands than there was 10 years ago."

communicate with a variety of vendors. In one such forum, Dill talks with suppliers about their business interface: how they market, what kind of support they provide and how their own corporate organization works. He tells of one case in which a group of CIOs met with officials of a company that had a terrible reputation among large corporate clients because of its business policies. "We invited them in for a discussion, and [immediately thereafter] each corporation involved in the session had an executive liaison assigned to them," he says. "That cleared up the major portion of those problems."

Many vendors, knowing it is to their advantage to obtain that sort of information, arrange forums at which customers talk about their business problems and help define solutions. Fred Engel, vice president of engineering at Concord Communications Inc., manufacturer of Web-based automated reporting software in Marlboro, Mass., listened to some 50 customers before the company shipped a new product. "The only way to sell a network management tool is to [talk to] people who have problems with network management and are willing to spend money to solve them," he says.

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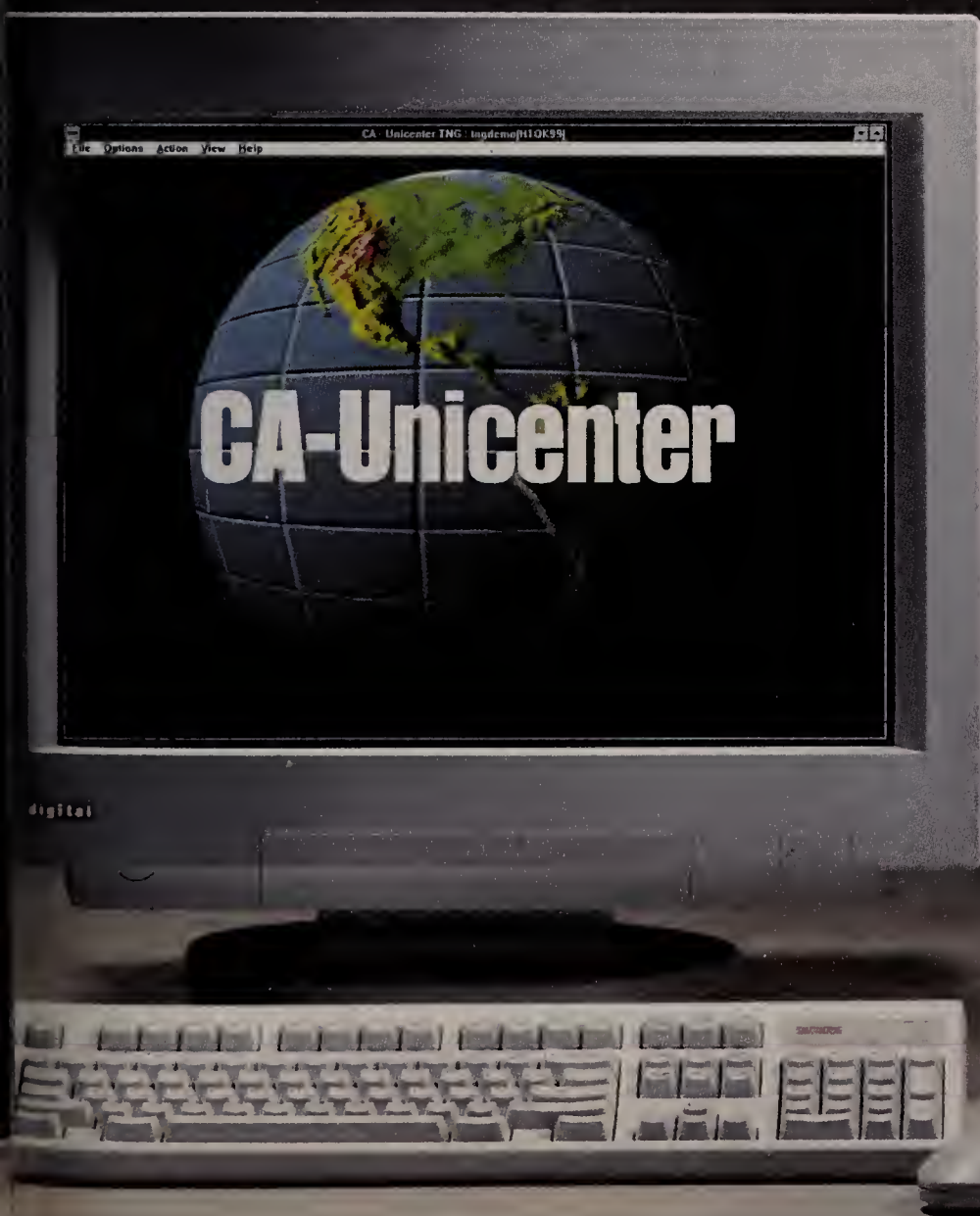
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2 Talk of the town. Danielsen sees numerous benefits in providing feedback to vendors on how their products are being used. If the installation is large enough, he forms a "lessons learned group" that collects information on usability and functionality, which he then shares with the vendor. That conversation often leads to a discussion of future product enhancements designed to make the product easier to use and more responsive to the company's business needs, he says.

3 The view from here. CIOs should articulate to vendors where a particular market or technology is or should be heading, from the customer's perspective. "When we talk with a customer, we want to know whether the CIO has the same picture of the key issues that we have," says Jim Wilson, sales automation program manager for Cincom Systems Inc. in Cincinnati. Cincom attaches so much importance to compatibility of views that the company employs a formal method called Customer Integrated Decision Making (CIDM) to solicit customers' input. "We found our strategic CIDM project helped us better identify the burning issues among our customers," Wilson says.

As a result, the timing and target platform of a new product release may be one of those issues a

"The people who can make the most compelling arguments are those who see the bigger picture rather than just their own specific needs."

—James Moffatt

CIO can affect. "We recently had a situation with a major customer where we agreed on direction, but [they felt] the timing of our next release on the platform they wanted was wrong," Wilson recalls. The company, a well-known name in electronics, wanted to implement one of Cincom's products on Digital Equipment Corp. hardware. The electronics maker had sufficient clout to convince Digital to assign technology and personnel to help Cincom accelerate its schedule. "One thing CIOs can do," Wilson says, "is bring some of their alliances to the table to speed up the [development] process."

4 Bosom buddies. One often-heard complaint from CIOs is that software vendors issue new releases too frequently. "Technology change is so rapid that CIOs have a hard time keeping up with things that would actually improve the productivity of the products and services they buy," says John Parkinson, chief technologist for Ernst & Young LLP's enterprise solutions group, based in



Jim Wilson: "When we talk with a customer, we want to know whether the CIO has the same picture of the key issues that we have."

Irving, Texas. "There's a real dilemma as to how much time and effort to devote to trying to influence product directions in fields that are moving faster than you can absorb their capability."

Keeping up can mean almost continuous rollout and retraining and often repeated in-house adaptation of packaged software to meet specific business requirements. The danger of failing to keep in lock step with the vendor's release schedule is the cessation of support for older products after a few years, says James C. Moffatt, a partner in Coopers & Lybrand LLP's Philadelphia office. A vendor may be unwilling to continue supporting outdated software for a single company, but by banding together, CIOs in the user community are more likely to obtain the support they want, Moffatt says.

Alliances between vendors and customers can also benefit both. Danielsen tells of a vendor who asked him to suggest other companies to complement the vendor's energy management system product suite. "I mentioned two vendors that I thought had good products," he says. "Together, the three companies brought out a combined offering that saved me an awful lot in systems integration and maintenance costs. Being a marriage broker paid off immensely."

5 In the incu-beta. CIOs sometimes agree to get involved in their vendors' beta test programs in or-

der to have a say in new product features and functionality. At PG&E, for example, Danielsen includes his users in the company's standard desktop environment tests. Change can require a significant commitment of resources, and Danielsen wants to have as much influence as possible over the outcome, he says. He also takes part in beta tests of business systems that have a companywide impact, such as customer information and back office applications.

But beta testing has its downside, notes Parkinson. "It's a very expensive process to do properly," he says. "You have to commit to running at least some part of your organization on software that doesn't necessarily work yet. It can be done, but it's a high-adrenaline process."

EXPERTS AGREE THAT information is the best weapon in a CIO's arsenal of influence. CIOs gain credibility when they can demonstrate that they understand the difference between needs that are specific to their company and those they have in common with others in the industry, American Management Systems' Gnagey says. The most influential customers are those who not only can present to the vendor a clear picture of the

problems they are trying to solve but also can show how those problems affect others in the same industry or, even better, in other industries as well. CIOs who can accomplish that feat find it easier to get a supplier's attention. "The people who can make the most compelling arguments are those who see the bigger picture rather than just their own specific needs," says Moffatt.

To influence their suppliers as effectively as possible, CIOs need to recognize that vendors cannot always adjust to their customers' demands to slow down the introduction of new technologies. "We're finding that if you only do exactly what the customers tell you, you can go out of business just as fast as if you don't listen to them at all," says Bill Barnard of Barnard Norman Associates in Sunol, Calif., a consultant who helps vendors interact with their customers and the developer of CIDM methodology used by Cincom and other companies. Adds Parkinson, "Vendors walk a fine line between what is technically possible and what is economically viable, and the more successful a vendor is, the harder that is to do." **CIO**

Contributing Editor Miryam Williamson can be reached at mwilliamson@reporters.net.

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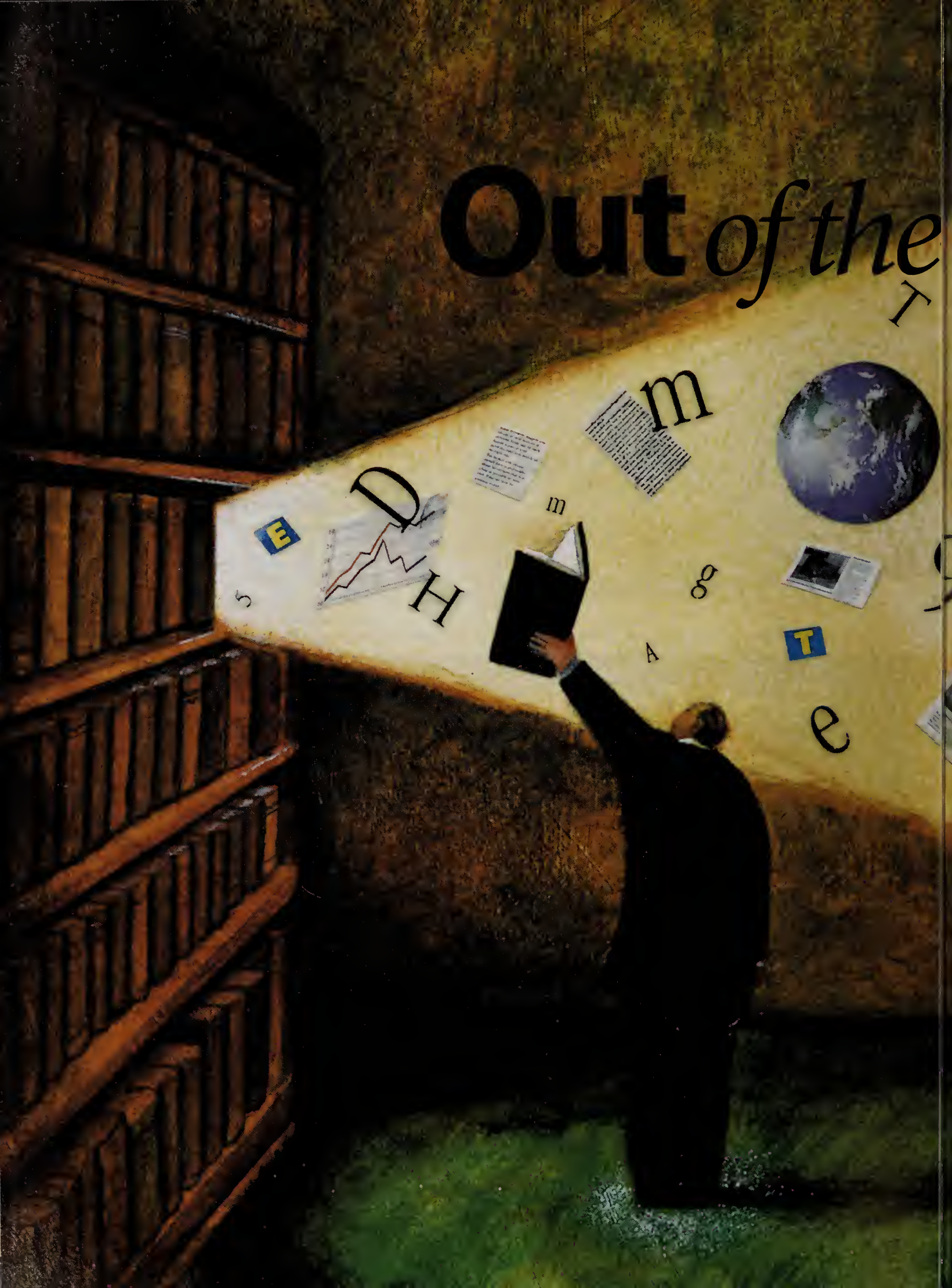
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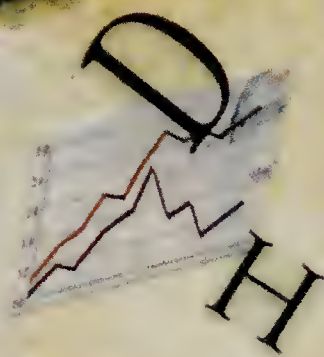
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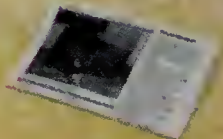
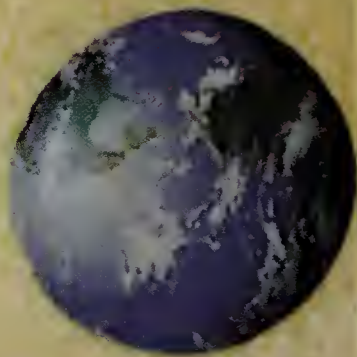
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Stacks...

...and into the ether. Today's corporate libraries are as vast as the Internet and come in just about any medium imaginable. But there are some things you'd better think about if you want to avoid having your information resources gather dust.

BY HEATH ROW

AS INFORMATION BECOMES more available and applicable to its users, its value increases. If you can lay your hands on exactly what you need exactly when you need it, the information is golden. If you can't, it's chicken scratch.

In an attempt to decipher the chicken scratch of information within a company and turn it into profitable intelligence, many enterprises and IS departments are turning to knowledge management. While the concept isn't new (see *CIO*, July 1995), few companies have had much success putting it into practice. One development that might help them is the emergence of corporate digital libraries.

Many companies have physical libraries where employees can go for research assistance and reference materials, but more and more corporate libraries are going online. Of course, it's early days yet. In a survey of almost 500 companies in the fall of 1995, Teltech Resource Network Corp., a Minneapolis-based research and information management consulting company, determined that about 45 percent of the enterprises surveyed had no knowledge management or digital library plans. Of the 55 percent that talked the talk—those who were sponsoring grassroots efforts or had people serving knowledge management functions—only 15 percent actually had formal, executive-sponsored endeavors. By looking at companies that are implementing and managing corporate digital libraries successfully and examining the resulting change in the librarian's role, CIOs can plan knowledge management projects that are scalable and sustainable.

cor•po•rate dig•ital li•brary

A corporate digital library provides a framework for the organization and presentation of a broad range of information from a wide variety of sources, including archived documents, databases of corporate knowledge and even high-bandwidth multimedia such as video files. Because digital libraries usually incorporate the Internet, these sources can come from just about anywhere—far-flung divisions, universities, research centers, business partners. A digital library also can encompass information about human knowledge within the organization.

Larry Prusak, managing principal of knowledge management with IBM Corp.'s Consulting Group in Boston, says companies can take several approaches to corporate digital libraries and knowledge management: archiving information in document form, maintaining dynamic databases and data warehouses of corporate knowledge, mapping human knowledge within the organization (that is, recording who knows what, and how to reach them) and capturing knowledge in high-bandwidth multimedia such as video files. Many companies, however, haven't moved beyond the first step, he says.

"Putting [information] on computers doesn't do anything but make it more accessible," Prusak says. "If you're managing documents, no matter how you're doing it, you're still managing documents. The wider the bandwidth, the closer you actually get to managing knowledge."

A digital library can provide a framework for all of those knowledge resources and encompass information from a variety of sources, both internal and external. Ina A. Brown-Woodson, district manager of library and information services at AT&T Labs in Holmdel, N.J., is planning the reorganization of AT&T's Notes- and intranet-based library in the wake of the breakup of AT&T, Lucent Technologies Inc. and NCR Corp. She hopes to team up with educational institutions like the University of Michigan and the University of California at Berkeley to access their electronic libraries and networks, and she plans to provide users with bibliographic information, full-text journals, business market information and knowledge maps. "My challenge is to do that and make it seamless for our customers without losing ground," she says.

PART OF THE GREAT appeal of a digital library is its flexibility. Hypertext and other dynamic linking methods allow libraries to be works in progress, always drawing on the best and newest information sources and not relying heavily on old news or static data, says Nancy Lemon, leader of knowledge resources for the home-building materials manufacturer

Owens Corning in the company's Granville, Ohio, office. Librarians can offer top-of-the-line information, transparently switching sources as new services become available and user needs change.

Digital libraries are easier to maintain than many traditional resources, according to Terry Koluch, whose title is paper-free expert and intranet webmaster at Owens Corning's headquarters in Toledo, Ohio. By moving from networked CD-ROM products on the company's LAN to Web-based sources available via the intranet, Owens Corning has reduced the time spent getting systems ready for use. "Keeping the CD-ROM library functioning is a manually intensive process," Koluch says. "Every CD we get

Lybrand LLP's knowledge strategies group, says a license for an online research service used by 16,000 employees can be cheaper than timed access to the same service for several hundred users.

BUT THE PROMISED benefits of flexibility and cost savings are not enough to bring corporate digital libraries to fruition. Success depends on good design and the involvement and investment of the business users who access the system. Andy Michuda, president of the knowledge management services division of Teltech, says the way corporate digital libraries are organized and the way employees respond to that organization can be the highest

"Some sources of information are more valuable than others. Librarians can make these decisions better than users."

—Nancy Lemon

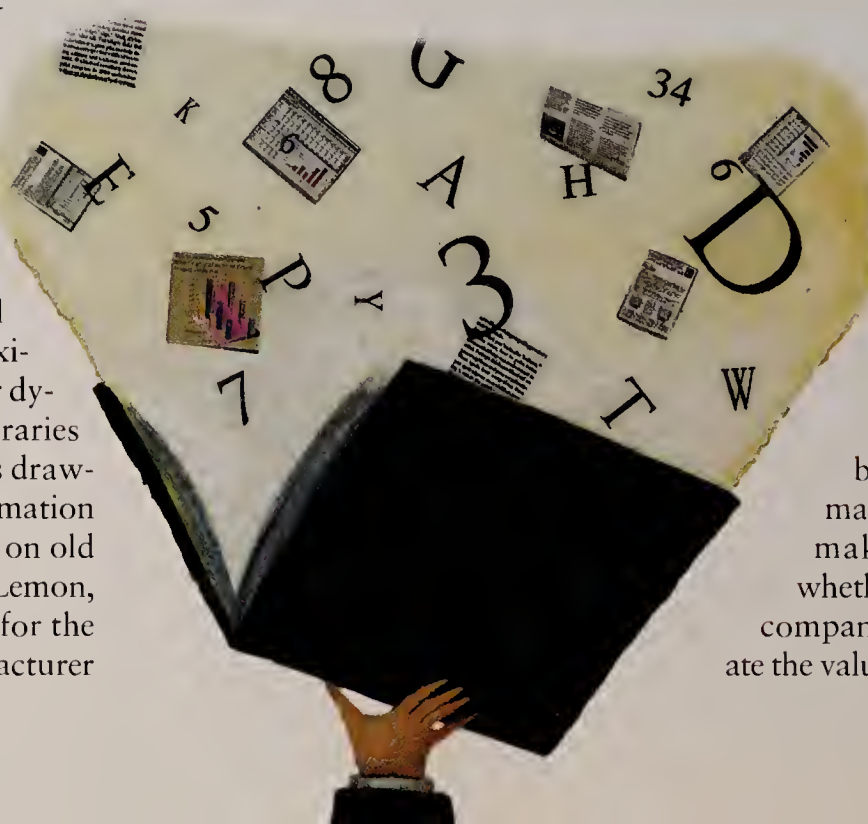
has a slightly different interface or a slightly different script you have to set up to get access."

The library saves money as well. Koluch says a CD-ROM resource that costs \$6,000, for example, might have an online counterpart accessible for only \$4,000. While Owens Corning still includes CD-ROMs in its digital library framework, it uses online alternatives whenever possible.

The centralization made possible by a digital library framework can reduce costs enough to let an organization provide access to a greater number of people. Mik Chwalek, a partner in Coopers &

hurdles. For instance, if businesses rely too heavily on a push model—where employees periodically receive information via e-mail or other delivery mechanisms—the troops can easily suffer information overload. At the same time, if businesses elect a pull model—where employees search for information on their own—organization becomes even more important. Librarians and knowledge managers can help balance such issues. "You need to have intelligent filters and an appreciation of the human element," Michuda says. "The value question is going to fall on the managers of this content."

That is a new role for librarians, who historically have been trained to respond to every information request. These days, they are starting to judge the validity and value of users' information needs as well as pick and choose the requests to which they will respond. At Owens Corning, for example, librarians decide whether information will help an employee make a better decision and whether that decision will help the company make money. "We evaluate the value of information to the com-





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Lynda Rosenthal & Joseph L. Levy

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CIO's must understand the nature of both leadership and change.

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Our latest *CIO Perspectives* conference, **Leading the Charge in Turbulent Environments: IT as a Change Agent**, March 23-26 at the Sheraton San Diego Hotel & Marina in San Diego, California, will allow IT executives to investigate the difference between leading and managing strategic corporate change.

Our keynote presentation will team two of the world's most noted authorities on corporate change and management, **Peter F. Drucker** and **Warren Bennis**. Our moderator will once again be **Jim Wetherbe**, director, MIS Research Center, *University of Minnesota*, Federal Express Professor of Excellence and director, Center for Cycle Time Research, *University of Memphis*.

Sessions will feature how corporations were able to survive change and progress. Featured presenters include **John Dahms**, CIO, *CIA*, **Dr. William Limond**, group director, information services, *British Gas plc.*, and **James J. Skinner, Jr.**, vice president of systems, *Swiss Reinsurance America Corporation*. **Abbie Lundberg**, editor, *CIO Magazine*, will moderate a roundtable discussion on specific techniques IS executives have implemented in driving change, featuring **David Kepler**, director of information systems, *The Dow Company*, **Phil Newbold**, former vice president and director of information technology services, *Kaiser Permanente*, **Debra Robinson**, vice president, information technology, *Delaware North Companies, Inc.* and **Linda Wiersema**, general manager of information technology & CIO, *LTV Steel*.

Jack Trout, president, *Trout & Partners*, will discuss the latest on the world's best business strategies. This conference will also feature **Tom Davenport**, Curtis Mathes Fellowship Professor, director, information systems management program, College & Graduate School of Business, *University of Texas at Austin*, **Richard D'Aveni**, professor, Amos Tuck School of Business Administration, *Dartmouth College* and **Eileen Shapiro**, president, *The Hillcrest Group, Inc.*

To enroll, please visit our Web site at <http://www.cio.com> or complete the enrollment form on the back of this brochure and fax it to 508-879-7720. You can also call us at 800-366-0246. **Don't delay! Sign up now for the most relevant conference of the year!**

Regards,

Lynda Rosenthal

Lynda Rosenthal
Senior Vice President & General Manager
Executive Programs

Joseph L. Levy

Joseph L. Levy
Group Publisher & President

Constantly Making Change...Happen

By Carol Hildebrand

When it comes to change, many CIOs find themselves serving two conflicting masters.

More than ever, companies regard IT as a strategic tool to reinvent organizations as global competitors. And as leaders of a company's strategic technology direction, CIOs are at the hub of corporate change. Yet IS executives must also manage the day-to-day details of implementing such visions.

"If your eyebrows aren't raised in confusion and curiosity by now, you don't realize what's going on," says **Warren Bennis**, Distinguished Professor of Business Administration and Founding Chairman of The Leadership Institute at the University of Southern California.

With such a balancing act to perform, IT professionals must first redefine their job responsibilities in order to lead corporate change.

"Right now, there's too much of a credibility gap between the evangelist role and the day-to-day implementation role," says **Tom Davenport**, Curtis Mathes Fellowship Professor and Director, Information Systems Management Program,

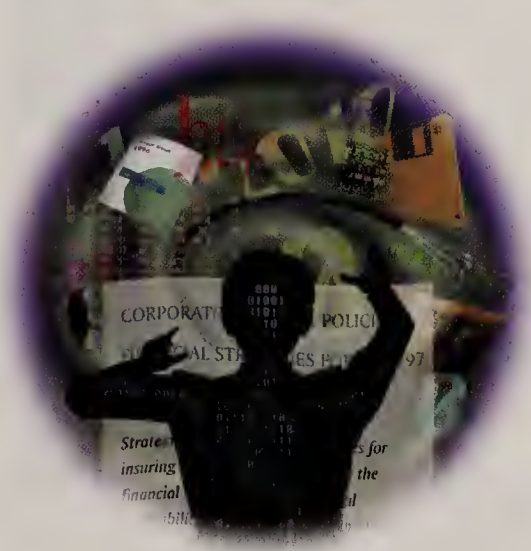
College & Graduate School of Business at the University of Texas at Austin.

IS executives need to start thinking about the business information that flows along technical conduits rather than the conduits themselves,

says Davenport. "Companies are looking for CIOs that understand the business and the role that information plays. The idea of technologists who can understand technology and implement it isn't enough anymore."

That's what **James J. Skinner, Jr.**, the vice president of systems at Swiss Reinsurance Co. discovered when his staff started implementing a paperless office environment based on workflow software. "The big change-related issues aren't technical," he says. They lie instead in IT's ability to comprehend the way that business information should flow throughout a company.

Fortunately for Skinner, he spent more than fifteen years on the user side of the house, doing stints in departments as varied as marketing and underwriting. "I know many of the functions, and can relate to the problems they have," he says. "My message is always that the more you know about your business, the



**"If your eyebrows
aren't raised in confusion
and curiosity by now,
you don't realize
what's going on."**



better. You cannot talk somebody into how good IT can be. It has to come from them."

And for a technical imperative to be driven by users, it must first answer users' increasingly pressing need for quick access to timely knowledge, says Davenport. CIOs "must take a leadership role in creating a knowledge and information-based culture. Think about how the workforce makes information-based decisions, and encourage people to gather, share and act on information. Try to hire people who are information and knowledge seekers, instead of all tech, no talk."

Management guru **Peter F. Drucker** says that corporations will develop entirely new business systems to measure the cost and performance of their own enterprises, and that these systems will not come out of information technology. Rather, he says, "they require new managerial concepts." Today's methods of measuring the worth of a company are completely obsolete, he says, since they ignore one of the most vital assets of a company doing business in the Information Age: intellectual capital.

As companies learn to count the worth of ideas rather than general ledger items, Drucker expects to see the accounting function blend into

the role of the CIO. "In ten or 15 years, organizations will have only one information officer and one information system, where today they have two," he says — "the chief accountant in charge of our oldest system, and the CIO in charge of the new information technology."

**"Leaders are people
who do things right.
Managers are people
who do the right things.
There's a profound
difference."**

Laws of Nature

One thing, however, remains constant: In order for a CIO to understand his corporate role as a change agent, s/he must first understand the nature of both leadership and change, both in the company and personally. From managing the CEO's expectations to defusing resistance to new technical projects, leading change in IT means far more than deciding on a new architecture for the company.

Warren Bennis says that CIOs should first understand the profound difference between leadership and management. "Leaders are people who do things right. Managers are people who do the right things. There's a profound difference. When you think about doing the right things, your lexicon becomes one of missions, visions, strategic intent, purpose. But when you think about doing things right, you think about how-to. Leaders ask the what and why question, not the how question. Leaders think about empowerment, not control. And the best definition of empowerment is that you don't steal responsibility from people."

Such ideas may seem hard to swallow — but then, that's the nature of change. Humankind nearly always balks when confronted with a move from the status quo; visionary CIOs will grasp this unique opportunity to simultaneously transform his job and his company.

Carol Hildebrand is a senior writer at *CIO Magazine* and can be reached at cjh@cio.com. **CIO**

Leading the Charge in Turbulent Environments: IT as a Change Agent



Leaders to the Core

Warren Bennis divides leadership skills into four core competencies. Interestingly, not one of them is labeled, "Must have MBA and/or good number-crunching skills." Instead, Bennis emphasizes people skills — the four categories comprise some uncomfortably squishy stuff:

One
Provide direction and meaning to a corporate effort.

Two
Generate and sustain trust amongst employees

Three
Become purveyors of hope and optimism

Four
The capacity to convert purpose and vision into action and results.

"They must inspire people both in their heads and their hearts," says Bennis.

Conference Agenda

Sunday, March 23

3:00pm - 6:00pm

Conference Registration

7:00pm - 9:00pm

Welcome Reception

9:00pm - 12:00am

Hospitality/Networking

Monday, March 24

7:30am - 8:15am

Breakfast

8:15am - 8:20am

Welcome & Opening Remarks



Joseph L. Levy
Group Publisher & President
CIO Communications, Inc

8:20am - 9:30am

First, Change All the Rules



Dr. Jim Wetherbe
Director
MIS Research Center
University of Minnesota
Federal Express
Professor of Excellence
Director
Center for Cycle
Time Research
University of Memphis

FedEx is the world's first service organization to receive the coveted Malcolm Baldrige Award, is touted as

one of the top four corporations to work for in the U.S. and is one of the ten most admired companies in the world. What changes in their business processes were necessary in a work force of 120,000 people to let FedEx consistently, absolutely, positively provide on time service...every time? The eleven principles that guide this corporation and make it successful with its internal and external customers can be deployed by every organization, every IS function and every employee.

9:30am - 10:15am

A CIO's Vision of the IT Forest Through the Trees



James J. Skinner, Jr.
Vice President
Systems
Swiss Reinsurance
America Corporation

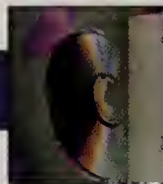
In its demand for rapid recovery, response times, efficient processes and a requirement for global strategies, the insurance industry is driven by technology. A crucial element in providing exceptional customer service, support for business needs and underwriting for Swiss Reinsurance was the broad implementation of new and improved technologies and processes. Skinner will discuss why Swiss Reinsurance reengineered their information systems in contracts, claims and other worldwide departments and how they effected these changes.

10:15am - 10:45am

Coffee Break



This author's most recent book will be distributed at the conference.



10:45am - 12:15pm

The People Side of Change: A CIO Roundtable

CIOs share specific techniques they have implemented in driving change.

Moderated by:



Abbie Lundberg
Editor
CIO Magazine

Panelists:



David E. Kepler
Director of Information Systems
The Dow Company



Phil Newbold
Former Vice President and Director of Information Technology Services
Kaiser Permanente



Debra Robinson
Vice President
Information Technology
Delaware North Companies, Inc.

Linda Wiersema

General Manager of Information Technology & CIO
LTV Steel

Although CIOs may be uniquely positioned, not all are well equipped to drive change. Because the IS organization has an enterprisewide perspective, the use of technology can influence peoples' attitudes and behavior. Technology's the easy part — changing people's behavior is hard. The CIOs participating in this discussion, all of whom have led successful change efforts, will share specific techniques for driving change and offer lessons you can apply to your own situations.

12:15pm - 1:30pm

Luncheon

1:30pm - 2:30pm

From Techno-Culture to Info-Culture



Tom Davenport
Curtis Mathes Fellowship Professor
Director
Information Systems Management Program
College & Graduate School of Business
University of Texas at Austin

One key reason why IS groups have had difficulty in leading organizational change is their overemphasis on technology. The IS techno-culture creates a barrier between IS and its customers. As an alternative to a technically-oriented culture, many IS groups are beginning to adopt information and knowledge management oriented cultures. This presentation will give examples of these organizations, along with specific steps to follow to achieve an info-culture and to take a leadership role in information-driven organizational change.

2:45pm-3:30pm

Concurrent Sessions

3:30pm-4:15pm

Coffee Break

4:15pm-5:00pm

Concurrent Sessions — Repeated

6:30pm - 8:00pm

Reception

8:00pm - 12:00am

Hospitality/Networking

Tuesday, March 25

7:00am - 8:00am

Breakfast

Measure Your 10 Critical Change Skills

A Change-Map (C-Map) survey will be distributed to you at registration. Fill it out and self-score it at your leisure... bring it to the "Mapping Your Route Through Change" session on Tuesday morning...you'll see how change affects you!

8:00am - 9:30am

Mapping Your Route Through Change



Bob De Filippis
President and CEO
Career Partners International

To capitalize on the opportunities that come with change, we must discover how to lead and manage ourselves — as well as our teams — with our own personal "repertoire of change management skills." This session will allow you to examine your change management capabilities through personal responses to ten critical change skills with the use of the Change-MAP (C-MAP) survey. After completing the survey, you will be guided through the analysis of your responses and development of the action steps to improve your change management competencies.

9:30am - 10:15am

Information — Corporate Asset



Dr. William Limond
Group Director
Information Services
British Gas plc

Bill Limond is a proponent of Peter Drucker's maxim on information management, "In the end, the only thing we have to manage is information itself." Limond will discuss the evolving role of IT and IT manage-

Leading the Charge in Turbulent Environments: IT as a Change Agent

ment in global enterprises. He will also examine the information and cultural gaps evident in today's IT arena. To meet the challenges of the future, CIOs must lead change in dramatic ways, if they are to succeed in tomorrow's world. British Gas has experienced tremendous growth and change. You will learn the initiatives and processes used at British Gas to meet customer demand for information.

10:15am - 10:45am

Coffee Break

10:45am - 11:30am

Concurrent Sessions

11:45am - 12:30pm

Concurrent Sessions — Repeated

12:30pm - 1:30pm

Luncheon

1:30pm - 2:15pm

Concurrent Sessions

2:30pm - 3:15pm

Concurrent Sessions — Repeated

3:15pm - 3:30pm

Coffee Break

3:30pm - 5:30pm

Pinnacles of Management and Leadership



Peter F. Drucker

*Clarke Professor of Social Science and Management
Claremont Graduate School*



Warren Bennis

*Distinguished Professor of Business Administration
Founding Chairman
The Leadership Institute
University of Southern California*

Peter F. Drucker, the world's premier management guru, and Warren Bennis,

leadership scholar and authority, will join intellectual forces for two solid hours. They will each offer views on successfully driving organizations into the next century. Following their individual presentations, they will engage in a dialog and then accept questions from the audience. Don't miss this opportunity to tap into over one hundred years of excellent management theory and practice.

5:30pm - 7:00pm

Reception with Peter Drucker & Warren Bennis

7:00pm - 12:00am

Hospitality/Networking

Wednesday, March 26

7:15am - 8:00am

Breakfast

8:00am - 9:00am

The High Cost of Mistakes



Jack Trout

*President
Trout & Partners
Author*

The New Positioning

Today's turbulent times are dominated by one word: competition. If you make a mistake in today's marketplace, your competitors quickly take your business...and you don't get it back. This session will discuss how to avoid mistakes and will give you insights into where all marketing wars are fought: the mind. Packed with insight, analysis and irreverent advice, Trout's presentation will allow you to better understand which companies win and why companies fail in a world where everyone is after everyone else's business.

9:00am - 10:00am

The Quest for Knowledge



John Dahms

*CIO
Central Intelligence Agency*

As the world becomes wired and the Global Information Infrastructure matures, the amount of information available through open source explodes. New tools and processes are required to exploit this information. Tools are emerging to capture the real knowledge in the sea of information. The Agency, in concert with the U.S. Intelligence Community, is pursuing a strategy of using the Internet, intranets and extranets to meet this challenge. This session will detail how executing this strategy requires the CIA to reengineer its information service delivery mechanisms.

10:00am - 10:30am

Coffee Break

10:30am - 12:00pm

How to Ride the Wave of Hypercompetition...Without Wiping Out



Richard D'Aveni
Professor

*Amos Tuck School of Business Administration
Dartmouth College
Author
Hypercompetition*



Eileen Shapiro

*President
The Hillcrest Group, Inc.
Author
Fad Surfing in the Boardroom*

Major forces are escalating the level and shifting the basis of competition. D'Aveni and Shapiro agree that dominance cannot be accomplished by sustainable competitive advantage. D'Aveni tells about four arenas of competition and how players seize the

To enroll, visit our Web site at <http://www.cio.com> or call 800-366-0246.

initiative by creating major disruptions. He argues that the need to win requires a series of disruptive unsustainable advantages. Shapiro warns of self destruction without proper self-management. Expect a challenging, humorous and thought provoking session!

12:00am 12:15pm

Closing Remarks

Jim Wetherbe

Concurrent Sessions

Each Corporate Host will provide a concurrent session, which will be offered twice. You will be able to attend a maximum of six sessions, during three time blocks on Monday and Tuesday.

Maximizing the Return on Your Decision Support Investments



John W. Finnell, Jr.
*Manager
Decision Support
Integration Laboratory
Axiom Corporation*

Today's rapidly changing decision support system landscape poses especially difficult challenges for individuals responsible for adopting technology standards for an organization. Tradeoffs must be made between the value-added from new technologies and maximizing previous investments. This session will explore methods used at Axiom Corporation to deploy new DSS and Open Systems technologies while maximizing functional value and ROI for existing systems.

IT Solutions for the Twenty-First Century That You Can Use Now



Christopher J. Oliver
*Director of Engineering
and Manufacturing
Cabletron Systems, Inc.*

Much industry banter today deals with so-called "network computing" — a concept which promises that the large, costly and more complex IT investments will be centrally located and allow for more simple, less expensive network computers to be on every desktop in the workplace. In fact, the network computer is really the 21st century equivalent to the 1960's terminal mainframe architecture, though today's version has improved. This presentation will explore the network planning strategies that must precede any deployment of network computing solutions, and details the positioning of a cable and resilient switch-based information transportation network to connect the enterprise using both intranet and Internet technologies.

IT Will Never Be the Same Again



Alex Mendez
*Vice President of
Enterprise Marketing
Cisco Systems, Inc.*

Never before has there been as much pressure on IT chiefs to reduce cost, increase performance and speed the time it takes to get new applications into the hands of users. Consequently, computer networks are seen as a key enabler to delivering improved productivity, communication and automation. How can today's enterprise networks be leveraged to reduce project cycle times, lower operational costs and speed time to market? This presentation will examine the key business and technology trends driving today's corporation and why an effective IT and networking strategy is now a

corporate imperative. The session will also outline the keys to developing a standardized IT environment that enable cross-platform applications, computing and service customization, weighing the different factors such as risk, performance, cost, time and control, that play a central role in the decision to outsource or insource the enterprise network.

Transforming IT: Managing Continuous Change in Turbulent Environments



James J. Ryan
*Vice President
Information
Management Group
Data General Corporation*

The next wave of commodity-based computing promises to deliver a quantum leap over today's price/performance metrics. New computing waves come so quickly that most enterprises are slow to integrate these new technologies in their daily operations. In the same time it takes to implement new systems and business processes, an enterprise could find itself behind the curve. How can you implement new systems that enable you to take advantage of the next technology without putting today's business in peril? Strategies for surviving continuous change in turbulent environments, using the real-world example of change management at Data General Corporation will be offered.

Truth or Dare: IT as a Change Agent



Tom Martin
*Vice President
Large Corporate
Accounts Marketing
Dell Computer Corporation*

Can IT planning, deployment and transition activities be transformed from an expensive, slow moving process into a manage-

Leading the Charge in Turbulent Environments: IT as a Change Agent

able, economical project? Are standard computing environments really achievable? This session will illustrate how organizations that have adopted a lifecycle cost philosophy are better equipped to meet their global business needs while leveraging the most applicable technologies and saving millions of dollars in the process.

The IT Revolution: Empowering IT as a Catalyst for Change



Sandra Moran
Senior Director
Hyperion Software

Successful IT organizations are implementing an approach that views the user community, IT and vendors as business partners. In this scenario, the success or failure of the corporate strategy is directly related to IT's ability to provide an information infrastructure that supports rapid organizational change. This infrastructure requires an appropriate mix of client/server technology, data warehousing, multidimensional analysis and information delivery via the internet in order to give knowledge workers the right information at the right time via the right delivery mechanism. This session will discuss the tools that IT needs to provide a flexible information infrastructure to meet critical business goals, such as profitability and information accessibility, and to capitalize on a company's existing information assets.

Trends in Technology



Malcolm Colton
Director of Database Marketing
Informix Software, Inc.

The World Wide Web is an excellent example of the need for complex data support. Effective Web sites contain embedded links to other pages as well as text, images and, increasingly, video and sound. Complex search capabilities that can do pattern matching from visual images are being deployed. Informix-Universal server is the first commercial object relational data management system to combine industrial-strength OLTP, OLAP and infinite extensibility through DataBlade class libraries into a single DBMS engine. This session will discuss the applications for extensible object technology and how to develop, build and deploy DataBlades.

Strategic Inflection Points: IT's Role in Navigating Turbulence



Claude Wimberly
Director
Field Enterprise Programs
Intel Corporation

This presentation will focus on some of the things Intel's IT organization is doing to anticipate and react to the rapid changes and potential strategic inflection points that face Intel and other businesses. Andy Grove's recent book, *Only the Paranoid Survive*, describes the concept of "Strategic Inflection Points:" times when the balance of forces affecting a business or industry shift from the old ways of doing business and competing to a new way of doing business and competing. Those companies who best anticipate and adopt to these "10X" forces survive and thrive. IT can play a huge role in anticipating and reacting to business turbulence.

Breaking Through the Application Development Barrier with Best Practices



Rick J. Pleczko
Senior Vice President
Product Marketing and Development
LBMS, Inc.

For years we have been told that application development is too slow, produces poor quality, costs too much and gets in the way of business initiatives. Now we are hearing about IT organizations that are leading the charge, delivering better solutions to the business, enabling rapid business change and achieving and sustaining breakthrough levels of performance. 350% improvement in developer productivity, 70% improvement in project schedules and 90% reductions in defects have been achieved by using process management to deploy and continuously improve industry and organization best practices. This session will examine how organizations are implementing process management to dramatically improve performance in a turbulent environment.

Integration on the Run



Cully Culbreth
Director
Integration and Consulting Services
Access Graphics, Inc.

Courtesy of Lockheed Martin Corporation

With a growth rate of nearly 50% per year, Access Graphics has had to take some dramatic steps to keep up with business demands. With 90% of products shipped within 48 hours of order placement, those demands require a distribution system that is agile, efficient and accurate. As a result, Access is replacing its existing enterprise-wide information system to

improve interoperability of several vital business applications including order entry, purchasing, inventory, marketing and customer database. This session will focus on the importance of addressing cultural change in the implementation of new technology affecting the enterprise and utilizing tools which enable communications and value-added processes throughout the lifecycle of the project.

Business Capable Networks



Carl Pavarini
*Vice President
Small Business Markets
and New Business
Development
Lucent Technologies*

The rapid pace of today's business environment is causing IT professionals everywhere to continually examine their voice, data and multimedia networks. For companies to be successful in the long term, IT must bridge the gap between delivering the needs of today and planning for the future. This session will examine the forces changing the marketplace as well as their effects on today's networking, and present a plan that IT professionals can follow to help their companies realize "future-proof" business capable networking.

Minimizing Your Professional and Personal Risk as the CIO Change Agent



David P. Rodgers
*Vice President
Corporate Architecture
Sequent Computer
Systems, Inc.*

CIOs face two kinds of risks directly related to the role they play as change agent: personal, including dealing with stress, job carry-over into the home life and personal relationships that extend beyond the workplace; and professional, including career progression or

tenure with the company, potential impact on their resume and professional recognition. This session will explore a multitude of opportunities to enhance your success as a change agent and minimize your personal or professional risk. Dave Rogers will reveal numerous examples from real life situations that he has encountered during his career as a technology strategist, visionary and vice president of corporate architecture.

Leadership in the Trenches of IT



Paul Lawryk
*Group Manager
Market Development
North America
Sun Microsystems, Inc.*



Maynard Webb
*Vice President and CIO
Bay Networks, Inc.*

Paul Lawryk will discuss leadership trends of breakthrough thinkers in the IT world and show some original research 100 CTOs and CIOs about how they secure, develop and interoperate their heterogeneous enterprises in turbulent environments. Maynard Webb will tell how he implemented the most complex set of mission critical and distributed applications in record time. He dealt with an environment of fast acquisitions, personnel turnover, and budget shifts using his strong people and leadership skills.

EMCON 2000: A Program Management Experience



Cindy Stoddard
*Director
Information Systems
Emery Worldwide*

Courtesy of Texas Instruments, Inc.

Emery Worldwide has embarked upon a multi-year effort to reengineer all its core business applications. This

is being accomplished through their own efforts and direction without assistance from 3rd party integrators. This presentation will share the experiences and lessons learned by those who have attempted this type of endeavor. Topics include company background, program history, strategies, challenges, program governance, methods and tools utilized, accomplishments and lessons learned.

SmartVideoconferencing - End-User Training... Without the Travel



Tom Stevenson
*Vice President of
Marketing and Strategy
VTEL Corporation*

So you've made the move to client server and are pushing forward with your corporate Intranet. Now, how are you going to train all those end-users on the new software applications? Travel budgets are tight and managers can't afford for their limited resources to be off in class for days. Consider videoconferencing as the delivery vehicle for training end-users. Come hear how other large companies have trained the masses across a wide geography using the power of a videoconferencing system that's also a PC. Instructors can work through real software exercises with end-users while they get hands-on time at their own desktop or in a centralized location at their workplace. Video-conferencing today is for more than just meetings... it helps you get your job done.

Concurrent Sessions will also be presented by:

Centura Software Corporation

Computer Associates International, Inc.

Ernst & Young LLP

Hewlett-Packard Company

IBM Corporation

Companion Program Agenda

Sunday, March 23

3:00pm - 6:00pm
Conference Registration

7:00pm - 9:00pm
Welcome Reception & Registration

9:00pm - 12:00am
Hospitality/Networking

Monday, March 24

8:30am - 9:30am
Stretch & Tone Class

9:30am - 10:30am
Companion Breakfast

12:15pm - 1:30pm
Luncheon with conference participants

1:30pm - 5:30pm
San Diego by Land and Sea Tour

6:30pm - 8:00pm

Reception

8:00pm - 12:00am

Hospitality/Networking

Tuesday, March 25

7:00am - 8:00am

Breakfast with conference participants

10:15am - 10:45am

Coffee Break

12:30pm - 1:30pm

Luncheon with conference participants

3:15pm - 3:30pm

Coffee Break

3:30pm - 5:30pm

Keynote session with Peter Drucker and Warren Bennis

5:30pm - 7:00pm

Reception with Peter Drucker and Warren Bennis

7:00pm - 12:00am

Hospitality/Networking

Wednesday, March 26

7:15am - 8:00am

Breakfast with conference participants

10:00am - 10:30am

Coffee Break

Sheraton San Diego Hotel & Marina

Nestled at the water's edge on enchanting San Diego Bay, the Sheraton San Diego Hotel & Marina is ideally situated at the heart of a premier California destination. Offering majestic panoramic views of the Bay and downtown San Diego, the 1,050-room hotel complex offers easy access to both the airport and numerous area attractions and recreational opportunities.

Widely recognized for its rare blend of scenic elegance and a total preoccupation with service, the recently refashioned property offers a breathtaking tropical environment that captures the true flavor of its dramatic waterfront surroundings.





ACXIOM

Acxiom Corporation builds data warehouses for clients whose businesses depend on scope, accuracy and accessibility of customer information. Using a unique matrix of services, software and tools that transform data into customer knowledge, multiple internal databases are integrated with external information to drive powerful, knowledge-based decision support applications. With expertise in industries such as retail, banking/finance, insurance and telecommunications, Acxiom helps clients better understand their customers, build effective acquisition and retention programs, reduce response time and improve customer service.

CABLETRON SYSTEMS

The Complete Networking Solution™

Cabletron Systems is a leading maker of standards-based Ethernet, Token Ring, FDDI, ATM, SNA and WAN networking solutions, including SPECTRUM—an enterprisewide management system. Adhering to a strategic framework known as Synthesis®, Cabletron provides the building blocks necessary to implement a globally distributed platform of interconnected local and wide area networks. With Synthesis®, customers are assured of a smooth migration from today's connectionless, router-based networks to the connection-oriented, switched virtual networks of tomorrow, including corporate-wide, Web server-based intranets.

CENTURA™

SOFTWARE CORPORATION

formerly known as GUPTA

Centura Software's charter is to help our customers implement applications that meet critical business objectives over the long haul. We do this by delivering the powerful technology customers need to build complex, large-scale applications today, as well as the open, flexible architecture that keeps companies well-positioned for the future. Today, our Centura product line enables customers to build powerful applications in a single development environment, and deploy them however they need: intranets, the Internet, Java applets, three-tier, or traditional client/server.

CISCO SYSTEMS



Cisco Systems is the world leader in networking, helping customers exchange information without regard to differences in time, place or type of computer system. Cisco's solutions for corporate information networks and the global Internet lead to cost savings, process efficiencies and closer relationships with customers and business partners. Cisco is a multi-billion dollar company serving large enterprises, service providers and small/medium businesses. Cisco is a pioneer in applying Internet technology to business-critical applications such as customer support, order-entry, field sales, human resources and marketing.

To enroll, visit our Web site at <http://www.cio.com>

Corporate Hosts



Computer Associates International, Inc. (NYSE: CA), with headquarters in Islandia, NY, is the world leader in mission-critical business software. The company develops, licenses and supports more than 500 integrated products that include enterprise computing and information management, application development, manufacturing and financial applications. CA has 9,000 people in 130 offices in 40 countries and had revenue of more than \$3.5 billion in fiscal year 1996. CA can be reached by visiting <http://www.cai.com> on the World Wide Web, e-mailing info@cai.com or calling 516-342-5224.

Data General

Data General (<http://www.dg.com>) designs advanced systems using the best available commodity technologies, builds software alliances to deliver leading enterprise applications, and provides comprehensive services to design, implement and support business solutions. AViiON Intel-based servers, with robust clustering capabilities, form the core of Data General's products. Complementing this line are the industry-leading CLARiiON fault-tolerant disk arrays; NUMALiiNE technology for the next generation SMP systems; CYBERSHIELD, the highest security Internet server; and THiiN Line information appliances for the Internet.

or call 800-366-0246.



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Further Reading

Books

- *InfoMap: A Complete Guide to Discovering Corporate Information Resources*
Cornelius F. Burk Jr. and Forest W. Horton Jr.
(Prentice Hall, 1988)
- *Information Revolution: Pathway to the 21st Century*
Professional Papers from the 87th Annual Conference of the SLA
(Special Libraries Association, 1996)
- *Internet Tools of the Profession: A Guide for Special Librarians*
Edited by Hope Tillman
(Special Libraries Association, 1995)
- *Opening New Doors: Alternative Careers for Librarians*
Edited by Ellis Mount
(Special Libraries Association, 1993)

Other Resources

- "Blow Up the Corporate Library"
Thomas H. Davenport and Larry Prusak
(Pages 405-412, *International Journal of Information Management*, Number 13, 1993)
- "Competencies for Special Librarians of the 21st Century"
Joanne Marshall, Bill Fisher, Lynda Moulton and Roberta Piccoli
(Special Libraries Association, 1996)
Available at www.sla.org/professional/competency.html
- *The Value of Corporate Libraries: Findings from a 1995 Survey of Senior Management*
James M. Matarazzo and Larry Prusak
(Special Libraries Association, 1995)

pany," Lemon says. "Some [sources of information] are more valuable than others. We can make these decisions better than users."

Many companies can't utilize digital libraries fully because corporate culture and behavior have not changed with the technology. "Behavior is 90 percent of the challenge," says Michuda. To get over this hump, library designers must make sure that resources appeal to users, he says. This is a threefold challenge. First, designers must fully understand and effectively meet users' content needs.

the inconsistent organization.

To remedy the problem, Squires reorganized the company's knowledge base and established views for looking at the information hierarchically and departmentally, along the value chain and by timeliness. Users who knew which department was responsible for the material they needed could navigate the library using an organizational chart. Users who didn't know where to find what they needed but who knew whether their needs matched value-chain categories such as competition, sales and pro-

cess could use the value chain as an entry point. And people who needed time-sensitive news about current events, the stock market or new technologies could access that perishable information easily.

Sequent also established a publishing protocol so that all information added to SCEL would be tagged with consistent meta data recording authorship and other identifying information. The meta data makes searching for material easier and makes knowledge mapping and human-resource sharing more efficient, Squires says. In fact, the people who codify their knowledge for the electronic library are often better resources than their own documents and databases. "We can exercise all the library science we want," says Squires, "but if you're the owner of information, you know the information better than anyone else and you know the kind of questions people ask."

Designers of Sequent Computer Systems Inc.'s internal knowledge resource center—called the Sequent Corporate Electronic Library (SCEL)—erred by focusing too intently on ease of use on the publishing side, says Michael Lee Squires, digital library champion for Sequent's Internet technologies group. Not enough attention was paid to organizational issues of information access. Because it was so easy to publish material on SCEL, users treated the digital library as a file server or Web server and created pockets of similar information without grouping related material together. That made navigation difficult, and employees were frustrated by

They must then make it clear to users that the library framework and the information it makes accessible really will help them do their jobs better by integrating the library as a critical part of the company's business process. Finally, the design itself must make sense for the company's users. If the interface is kludgy or the library is difficult to navigate, it won't matter what information is available. "Access to the system has to reflect the user community," Michuda says.

In 1995, when Owens Corning started work on Infomap, its in-house knowledge resource center, Lemon and Koluch teamed up to link databases and subscriptions to online content providers under one umbrella. Lemon says the biggest challenge in developing Infomap, which has been up and running

Hypertext and other dynamic linking methods allow libraries to be works in progress, always drawing on the best and newest information sources.

since mid-1996, was creating a seamless architecture. Drawing on test runs and her 12 years of library experience at Owens Corning, Lemon analyzed how people look for information, then organized the company's online resources by subject and function, enabling users to start with broad topic areas and then drill down to their specific questions. She designed Infomap to let employees plot a decision tree to help them decide when to use what sources and determine what information they needed based on function and situation. As the map and tree got more complicated and the connections between different resources became more complex, Lemon decided that taking the resource center to the

Web, with its ease of navigation and maintenance, was the only way to make it practical. "It got hairy real fast," she says. "It was almost out of control." By using the Web rather than digging through each separate database, users can just hop by hypertext link from one topic to the next.

Infomap streamlines the search process by providing access to resources based on topical cues, Lemon says. In fact, users don't even need to know what source they're accessing when they look for answers. "They don't have to know what it is, where it is or why it's there," she says. "They don't care how they get it. They shouldn't have to know." Lemon can also change the resources being used without disrupting employees' access to information.

Transparent resource navigation can be especially critical when consolidating a wide range of dynamic information sources. In 1994, international management consultancy Coopers & Lybrand started to consolidate more than 30 uncoordinated libraries that served its 16,000 U.S. employees in more than 100 locations. The resulting system, CyberLYB, uses the Internet, an intranet and Lotus Notes to establish networks of expertise and a countrywide knowledge map. Eventually, CyberLYB will be available to the firm's 72,000 employees worldwide.

C&L's Chwalek says the company decides what resources to offer based on what employees need to access most often. Some resources are tailored to meet the needs of various departments. For example, the level of detail needed by an executive who's going to attend a dinner with another company's executives is markedly lower than that needed by someone placing a bid on a job. "You really need to understand the purpose for which the information is going to be employed," Chwalek says.

While CyberLYB is only one of six sections in Coopers & Lybrand's intranet, it draws on resources from the other business-unit-specific parts as well as from external Web sites and internal Notes databases. It also includes

various news wires and periodicals from vendors and independent sources, the Coopers & Lybrand News Network and a guide to internal databases, says Trish Foy, the company's director of library and knowledge strategies. But CyberLYB doesn't include or link to every resource available at Coopers & Lybrand. "One size does not fit all needs," Foy says. "There is going to be a subset of information that will never be a part of the CyberLYB."

NOT ALL ORGANIZATIONS choose to develop a centralized model, however. W.L. Gore & Associates Inc., the Newark, Del.-based manufacturer known for its Gore-Tex outerwear fabric, has decided not to establish a companywide library other than shared Notes databases for its 40 loca-

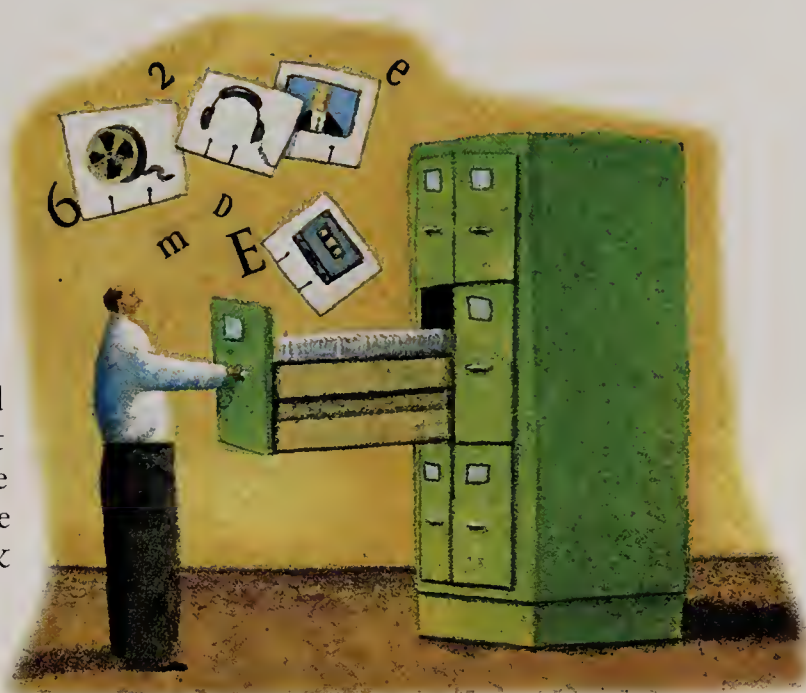
"Users don't have to know what information source they're accessing, where it is or why it's there.

They don't care how they get it.

They shouldn't have to know."

—Nancy Lemon

tions in the United States, the United Kingdom and Germany. The company's executives believe one library can't serve everyone's specific needs effectively. Instead, says Jamie Zingaro, a research information specialist for Gore, individual business units are encouraged to establish their own knowledge resource centers. Zingaro's group helps set them up and provides support along the way, but each business unit determines what its knowledge center will include and assumes responsibility for maintaining it. "If someone asks for a database to be created, they should make a commitment to manage that database," Zingaro says. "We have a 'sysop' mentality. For those folks who want to do that, we're more than willing to set that up."



Even though Gore doesn't have a worldwide digital library, the company has a small-scale library for corporate data that comprises Net resources and some external data sources. And Zingaro's group also serves as a central clearinghouse, providing a master plan of all resources through the company's Notes database as well as contact information. That way an employee in one part of the company can find out what resources are available elsewhere, and users of individual databases know whom to contact with questions, comments and complaints. An e-mail link might be a rudimentary form of knowledge mapping, but it can also make database managers more responsible. "People are able to tell who's working on what," says Zingaro.

The library model is a useful way to conceptualize the ways many companies are beginning to organize and provide access to information, mixing library science and knowledge management with today's networking tools. Librarians themselves are stepping out of the role of information gopher and into that of organizer, value assessor and teacher. "I don't think libraries were ever meant to be warehouses of knowledge," says Mary Lee Kennedy, manager of Digital Equipment Corp.'s corporate library group. "I don't want to be a gatekeeper. I really see us as designers, facilitators and analyzers of information." **CIO**

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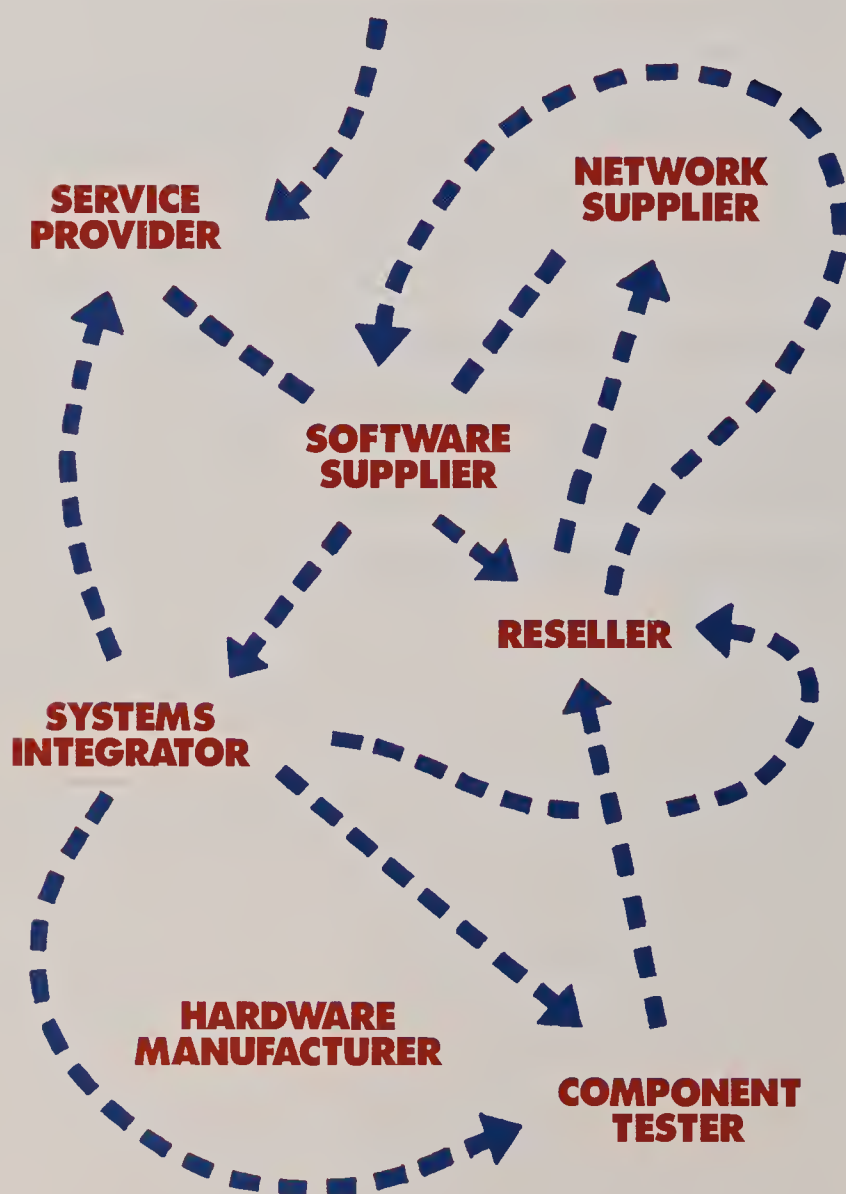
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Makeover Medicine

In times of crisis, a healthy dose of IT can help businesses rebound, rebuild or regain their competitive edge

BY JENNIFER BRESNAHAN

IT MAY BE THE MOST DRAMATIC turnaround story of the modern business era. In 1982, seven people in the Chicago area died from ingesting cyanide-laced Tylenol capsules. The crisis created a public relations nightmare for Johnson & Johnson, whose subsidiary, McNeil Consumer Products Co., manufactures Tylenol. Johnson & Johnson responded by recalling thousands of Tylenol products nationwide and by introducing tamper-proof packaging. But in 1986, after public fear had subsided, there was another incident—another death. This time Tylenol took its gel capsules off the market and replaced them with new, solid caplets that were less susceptible to tampering. The response was swift, but the damage was done. Experts predicted it was only a matter of time before Tylenol simply ceased to exist.

Yet, more than a decade later, Tylenol is still very much alive. Why? That was the question posed by Richard Tedlow, professor of business administration at the Harvard Business School, to the 468 attendees of the 15th CIO Perspectives conference, "IT Turnarounds, Transformations and Recoveries," held Oct. 13-16 at La Quinta Resort in La Quinta, Calif. It was a question designed to make conference attendees see how companies can bounce back from even the worst setbacks. The answer in the Tylenol case was that the CEO made all the difference. Demonstrating the

strong leadership skills Tedlow identifies as crucial to any business recovery, Johnson & Johnson's CEO immediately accepted responsibility for the crisis and then took strong, public action to mobilize internal resources, preserve public safety and prevent further incidents.

Not all business turnarounds are played out as publicly and dramatically as the Tylenol case, and it isn't always the CEO alone who comes to the rescue. Often, the CIO also is right there at the center of a business crisis, building IT as a dam to help stem the tide. That point was brought home by many Perspectives speakers, who cited IT as key to their companies' ability to emerge strong from turnarounds, transformations and growth. Whether a company is in crisis or growth mode, or simply wants to improve, the speakers agreed that significant business change often depends on strong IT tools and guidance.

Turnaround

"There are no system projects—only business projects enabled by IT," said Karen L. McKemie, executive project director of finance for Tenneco Business Services, headquartered in Houston. Tenneco, manufacturer of such diverse

products as Hefty trash bags and turkey basters, needed IT to help it come back from a near-death experience in 1991, when the company's stock was at an all-time low and its debt was \$9.3 billion. A benchmark analysis of its competitors revealed that



"There are no system projects—only business projects enabled by IT."

—Karen McKemie

even for something as simple as processing a single invoice, Tenneco's costs were twice the median of its competitors'. The only way for Tenneco to recover was to reduce its manufacturing costs and create efficient management—and that's where IS came in. Tenneco's strategy was to create shared services in IS, finance, HR and other common functions to eliminate redundancies in business processes. Since October, when the first shared services implementation was rolled out, all departments have used the same financial services system, resulting in organizational flexibility, standardization and a common language for information transfer. In addition, the company just began implementation of a three-

year SAP project, which McKemie projects will save the company \$150 million per year when completed.

Transformation

Johns Hopkins Health System, based in Baltimore, wasn't on the verge of failure before its transformation, but the lack of a universally accepted IT strategy kept it from reaching its full potential. Before the 40,000-bed, 270,000-outpatient hospital system started its IT transformation in 1994, its IS department was "juggling priorities without a whole lot of rhyme or reason," said Stephanie L. Reel, vice president and CIO of Johns Hopkins Medicine Center for Information Services. Meeting the needs of the Johns Hopkins staff, she said, was the single biggest obstacle to change. "Imagine it is your job to serve 1,000 CEOs, each with his or her own business, each with total autonomy, each empowered to be an entrepreneur who can do whatever it takes to get something done," Reel said. "Each of them can look in the mirror every morning and say, 'I am the best in the world at what I do.'"

Reel knew that the only way to gain acceptance for the changes her department suggested was to empower and involve her users in the implementation process. She formed several technology advisory boards heavily composed of physicians. And every change that was

restructuring IS governance, establishing a new mechanism for prioritizing projects and developing a new, collaborative relationship with IT users, IS has begun to optimize its resources. The user partnership has been especially key to helping IS meet Johns Hopkins' strategic needs. "It's far less frightening to take a risk when you have a close partnership," Reel said.

"Never before has there been a better time to be an industry revolutionary, or a more dangerous time to be an incumbent."

—Gary Hamel

Growth

The same principles behind turnaround and transformation also apply to handling tremendous growth and change. Victoria's Secret Stores, for example, which comprised four stores in 1982 and 700-plus by 1995, found itself growing faster than it could handle. But executives were willing to change. "We're in a fashion business; our culture is all about change," said Rick Amari, vice president of information systems. The trick was to encourage growth without expanding the company's manufacturing and distribution facilities. The \$2 billion division of Limited Inc. focused on three solutions: dynamic replenishment, vendor-managed inventory and a data warehouse. "Streamlined processes make satisfied sales associates, who make satisfied customers, which increases profits," Amari said.

Cycle times

Another way CIOs can help keep their companies out of trouble is to concentrate on improving the cycle time of their IT projects, suggested conference moderator James C. Wetherbe, director of the MIS Research Center at the University of Minnesota, and a professor and director of the Center for Cycle Time Research at the University of Memphis. "Cycle time is not speeding things up to create more stress; it's giving time back to you," Wetherbe said. "Of the 100 percent of the time it takes to get something done, only 3 percent is actually necessary. Ninety-seven percent of the time goes to waiting for it, scheduling it, losing it, finding it and expediting it."



National Car Rental is one good example of a company that reduced its cycle time to the customer's

benefit, Wetherbe said. By maintaining and sharing user profiles of customer preferences (such as automobile models and accessories), National matches its customers to the cars they want without having to ask repetitive questions.

Keynote speaker Gary Hamel, a professor at the London Business School and chairman of Strategos, a business strategy group dedicated to preparing for the future, agreed that CIOs must rethink how they measure change if they hope to provide the means for businesses to reverse—or prevent—misfortunes. Reengineering, for example, "is more about catching up than reinventing the future," said Hamel. And downsizing is like trying to make a fat person thin by cutting off his leg—you end up with a one-legged fat person.

The only way for companies to guarantee future competitiveness is to reinvent their industry. "If you want to think about the future, forget about market share and economic value added," said Hamel. "I'd like to suggest a new measure: What is your share of the new wealth that's been created in your industry in the last few years?"

No one, Hamel argues, is better qualified to lead this change than CIOs. "Never before has there been a better time to be an industry revolutionary, or a more dangerous time to be an incumbent," he said. "The goal is not to predict the future; the goal is to predict a future that you can make happen." **CIO**

Staff Writer Jennifer Bresnahan can be reached at jennifer@cio.com.

PHOTOS BY CHARLES SAPPINGTON / MORNINGSTAR PRODUCTIONS



Lunch outdoors provided opportunities to compare notes.

made was made slowly and with "a healthy respect for the past," she said. By

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Reporter's Notebook

CIO Perspectives Profiles

BY CIO STAFF

MELANIE L. MCCARTHY

President and CEO
Millennium Network Corp.
Colorado Springs, Colo.



Current Challenge: Finding a CIO to join this new, Internet-based, consumer goods retail operation. McCarthy attended the CIO Perspectives conference to meet and interview prospective candidates. "I want someone who can move fast and who has a lot of experience in databases," she says. "I want someone who can be a partner in this venture—who will take the strategy and run with it."

Thoughts on the CIO conference: "It's been very helpful. It's made me think about issues involving my organization more broadly than I have recently. But here's a dilemma I've found: Almost every IS person I talk to hates SAP, but they're still implementing it. Why?"

DON WICHAEL

Vice president, Information Technology
J.D. Edwards & Co.
Denver



Current Challenge: Having used AS400 as the foundation for its business software applications since the early '70s, J.D. Edwards has been working toward adopting open systems for two years as it shifts from host-centric development to more distributed computing applications.

Thoughts on the CIO conference: It reinforced the benefits of organizational change. "AS400 is very proprietary software. Open systems seems to be the direction of the future. The role of the traditional programmer is going to change, and we understand that change is our future."

JOHN P. MARZEC

Manager, Decision Support Systems
Sedgwick James Inc.
Memphis, Tenn.

Current Challenge: As part of Sedgwick's countrywide ISO 9000 initiative, the insurance brokerage is grouping its 60 distributed systems under a central data warehouse—part of the

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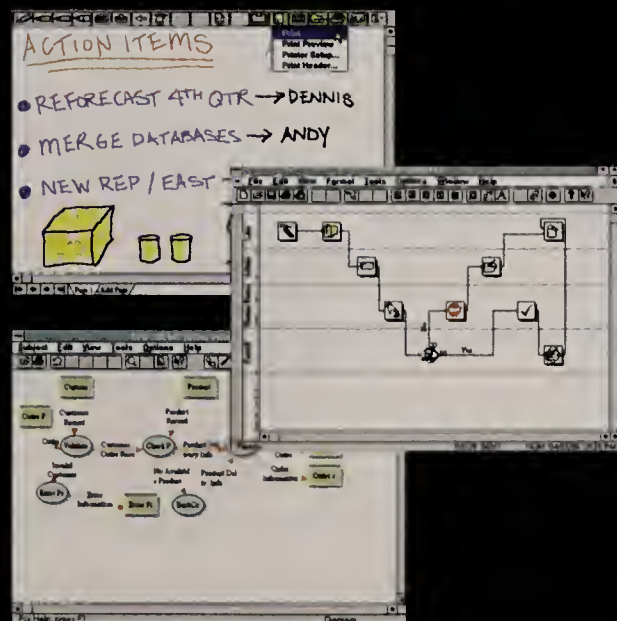
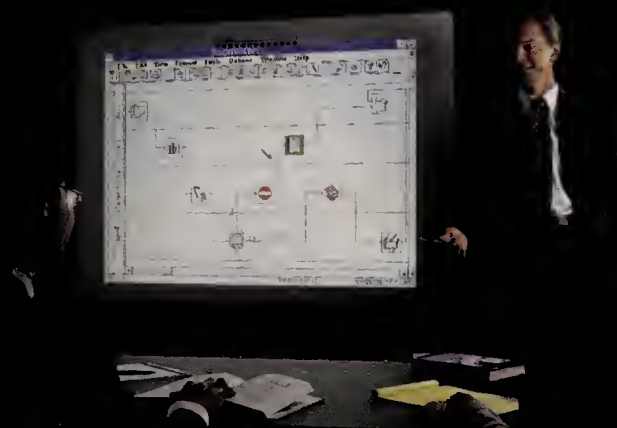
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Participants

- **Daniel Dardailler**, member of the World Wide Web Consortium; project manager of the Joint Electronic Payment Initiative (JEPI)
- **Bob Edelman**, vice president of Marshall Industries and ENEN (education, news and entertainment network)
- **Jim Galvin**, program manager for security, CommerceNet
- **Ken Horner**, global practice director of new media/electronic commerce for Deloitte & Touche Consulting Group
- **Pete Jacobs**, manager of electronic commerce, 3M
- **Ravi Kalakota**, professor, Simon Graduate School of Business Administration, University of Rochester; author of *The Frontiers of Electronic Commerce*
- **Tom Patterson**, chief strategist for electronic commerce at IBM Corp.
- **Barbara Reilly**, a product manager in the electronic commerce strategies service at Gartner Group Inc.
- **Thomas J. Smedinghoff**, partner at McBride, Baker & Coles; chair of the Electronic Commerce and Information Technology Division at the American Bar Association
- **Phyllis K. Sokol**, author of *From EDI to Electronic Commerce*

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THE MAGAZINE FOR INFORMATION EXECUTIVES

Reporter's Notebook

company's move from a traditional commission-based business to a fee-based risk management service.

Thoughts on the CIO conference: It helped validate the company's new IT standardization. "It's helping to standardize our office and business processes," he says. "The joke used to be, 'If you've seen one Sedgwick office, you've seen one Sedgwick office.' But it's easy to just consolidate. We've got to come through with a better understanding of the process itself and streamline the process."



ANGELO WIDER

Manager, Revenue Assurance, Finance Department
U.S. Postal Service
Washington

Current Challenge: Streamlining his department to compete against private enterprises, such as FedEx, and new communications technologies that offer alternatives to traditional mail delivery. "The most frustrating part is the time it takes to implement changes," Wider says. "We're like a big ship at sea that can't turn around on a dime. Once we identify what to improve, it takes up to a year to get it through the bureaucracy. Plus, there's no guarantee that by the time we're

ready there will still be funding available."

Thoughts on the CIO conference: "We're going through the same issues as the other companies here. We're not on the verge of failing, but we could be doing a lot better."

MARGUERITE DOWNEY

Vice president of IS
Fortis Inc.
St. Paul, Minn.



Current Challenge: "There is a lack of credibility for IS both at my company and in the industry as a whole," Downey says. "We're not very good communicators, and we haven't done a good job of managing expectations. People are getting tired of the rapidity with which change happens. We don't know how to change technologies every two years, and it looks like that's what we're going to have to be doing. Business is going through huge changes while technology is, too. We have to keep up with changes in both areas."

Thoughts on the CIO conference: "You go to a conference to learn new ideas or see if you're going in the right direction. Karen McKemie's talk [on shared services at Tenneco] reassured me that we are going in the right direction." **CIO**

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Emerging Technology

THE STATE OF THE ART,
NEW PRODUCTS
AND STAYING AHEAD
OF THE CURVE

Edited by Elaine M. Cummings

Advanced Technology Groups

If ATGs truly want to have an impact on the business, they must come down from their ivory towers

BY JENNIFER BRESNAHAN

WHO SAID BEING A WHIZ KID was going to be easy? Hindered by the conventional wisdom that advanced technology groups (ATGs) spend their hours spinning fanciful scenarios with no business relevancy, the so-called eggheads of most companies' ATGs have the unenviable task of trying to convince their colleagues to accept them—and their ideas—on faith. "It's hard for business people to see the value of ATGs," says Kim Sienkiewicz, manager of technology assessment and evaluation at John Deere Credit Inc., a diversified finance company whose primary business is financing agricultural and commercial equipment for Deere and Co. in West Des Moines, Iowa. "Advanced technology groups are supposed to be forward observers, but while ATGs are looking toward the horizon, business units are focused on the terrain they're going over now," he says.

That can make for a bumpy ride, says Dorothy Yu, a partner with Coopers & Lybrand LLP in Boston, because the failure rate for technology introductions is high for the typical ATG that hands a new technology project over to a business unit. Eventually, she says, IS resuscitates the technology beast or watches it flounder and die.

Rather than salivate over technology for technology's sake, says Yu, successful ATGs should straddle different departments to become business strategists, marketing

experts and help-desk specialists. They seek out business problems, pitch in to help IS implement technology solutions and then help the rest of the company make peace with its "newfangled" ways.

"ATGs that interact with other groups become more invested in the outcome of the project," says Yu. "Their recommendations are more realistic, which in the long run is

good for IS because it prevents them from having to force-fit an inappropriate technology."

Given a choice, CIOs clearly would prefer to work with ATGs that know the ins and outs of business strategies. So how do you transform a group of isolated technoheds into business-savvy collaborators? Here are some suggestions that can help your ATG become more responsive to business needs.

Whose Culture Is It, Anyway?

One critical skill for ATGs is the ability to evaluate a company's corporate culture. Different types of companies have varying thresholds of experimentation. A company whose business is rooted in computers, for example, will have an easier time convincing its technology-minded business group that a particular technology is valuable to them. "It's not hard to sell what we do," says Jack Dowling, CIO and vice president of computer reseller and service provider CompuCom Systems Inc. in Dallas. "Our company understands the benefits of technology."

But other companies, such as John Deere, are more conservative and less willing to try cutting-edge technologies. For such risk-averse companies, "we find that you can achieve huge impact and value with something that's less than rocket science," says Coopers & Lybrand's Yu. In cases like John Deere's, the ATG's value lies in its



IN THIS SECTION

Low-Voltage
Technology

CyberCash's CyberCoin

PictureTel's SwiftSite

Unisys's OneCall

ability to find new technologies that get the job done but don't turn off the users.

"If ATGs don't understand their company, chances are they're going to run into a rat's nest," says Sienkiewicz. "If a company isn't ready to hear the solutions yet, the ATG's suggestions are going to fall on deaf ears. People will say, 'Don't bother me with things three years out—I've got a problem with my PC right now.'"

That's exactly what happened to the ATG at John Deere. Sienkiewicz's group designed an intranet for companywide internal communication, but people simply wouldn't use it. For one thing, they found it intimidating, says Sienkiewicz. "They weren't buying into it," he says.

Talk the Talk

But John Deere's ATG isn't giving up. It is launching a massive internal public relations campaign and attending weekly meetings with middle managers to persuade others of the intranet's value. By communicating regularly with other departments, an ATG can learn what its colleagues need. The ATG members at John Deere, for example, used to wait for somebody to tell them what to work on. Now Sienkiewicz's staffers go directly to business units with ideas of their own. "We are helping [the units] think of 'what if' scenarios," says Sienkiewicz. And as the company itself has changed its focus to strategic planning, the company's ATG has been changed along with it. The group recently approached the marketing and sales departments with an idea to improve their voice-mail system by using Wildfire, a voice-activated electronic assistant from Wildfire Communications Inc. that manages daily telephone communications. "It wasn't that the voice mail we were using was bad," explains Sienkiewicz. "We simply knew we could make it better."

Similarly, CompuCom System's ATG stays in close contact with other business units. Darrell Piatt, CompuCom's director of advanced technologies, chats often with as many employees as possible to keep in touch with their needs. Business problems are revealed even in the most casual conversations or by observing a department at work. "Mostly what we do is see business opportunities and take advantage of them through technology—not the other way around," says Piatt.

Piatt is also an integral part of the information services department, attending all the same IS staff meetings as its CIO. Being an "IS insider" prevents Piatt from having to fight for IS funding and acceptance of his group's recommendations.

Into the Trenches

Beyond communicating with their "customers," ATGs should work side by side with them to make sure their research and input is as relevant as possi-

They Keep Going and Going and Going...

Remote workers get a boost from cheaper, more powerful sub-3-volt chips

COMPANIES LOOKING to equip their mobile workers with more robust and power-efficient notebook computers, personal digital assistants and cellular phones can look forward to a new generation of products based on sub-3-volt microprocessors and support chips.

Over the past few years, most mobile systems manufacturers have switched their units from 5-volt to 3.3-volt circuitry. But now the move is on to ultra-low-voltage technology, which will allow manufacturers to create smaller, more powerful products without increasing cost.

LOW-VOLTAGE TECHNOLOGY

The promise of reduced power consumption is the key reason manufacturers are moving toward lower-voltage technology, says Elvin Stepp, chairman of the electrical engineering technology department at the University of Cincinnati. "Lower power means longer battery life," he says. "The power dissipated by a digital device, such as a CPU chip, varies with the square of the operating voltage, so there is a major incentive to reduce [the voltage]."

David Somo, a division marketing manager at chip maker AMD in Sunnyvale, Calif., notes that the move from 5 volts to 3.3 volts allowed chip manufacturers to cut their products' power consumption by about 50 percent. He expects that upcoming processors and support chips—operating below 2 volts by the year 2000—will provide similar power savings, allowing systems manufacturers to adopt more powerful processors while extending battery life.

Memory makers are also behind the push to lower voltages, explains Stepp. "The manufacturers of [dynamic RAMs] can increase memory density by reducing operating voltage, and their desire to reduce operating voltage forces the other chips on the board to do likewise," he says.

Reducing the operating voltage requires chip manufacturers to shrink feature sizes simply to maintain performance. And lower voltages are inevitable as the industry moves to smaller, denser chips, says Somo. "On-chip voltages must be reduced in order to avoid damage to internal structures," he says.

All the major chip manufacturers currently are working on sub-3-volt products. Somo expects the field to begin consolidating by the end of the year as processor, memory and chip vendors begin making their new sub-3-volt devices available to portable-system manufacturers. As a result, the first sub-3-volt based notebooks, communicators and cellular phones should become available in 1998.

—John Edwards





Dear Executive:

On February 2-5, 1997, CIO Communications, Inc. and its Partners will host the Fifth Annual **Enterprise Value Retreat** at the Ritz-Carlton Laguna Niguel in Dana Point, California. This Retreat brings together over 200 corporate, government, and business school thought leaders to examine the dramatically changing structure in the IT environment of the late '90s.

The Retreat will be facilitated by F. Warren McFarlan, Senior Associate Dean, Director of External Relations and Ross Graham Walker Professor of Business Administration, Harvard Business School. He will lead participants through the increasingly difficult path of IT acquisitions, with innovative discussions on outsourcing, the CIO as in-house systems integrator and risk and investment management.

You will participate in a case study with the CIO and CEO of a \$2 billion power cable manufacturing corporation, led by Professor McFarlan. And, John J. Sviokla, Associate Professor of Business Administration, Harvard Business School, will lead a case study on the virtual value chain and the transition from marketplace to marketspace.

Participants are invited to attend the **Enterprise Value Awards Ceremony and Dinner** on Tuesday evening. Proudly underwritten by AT&T Solutions, the ceremony and dinner will honor recipients for their achievements in demonstrating enterprisewide Information Technology benefits.

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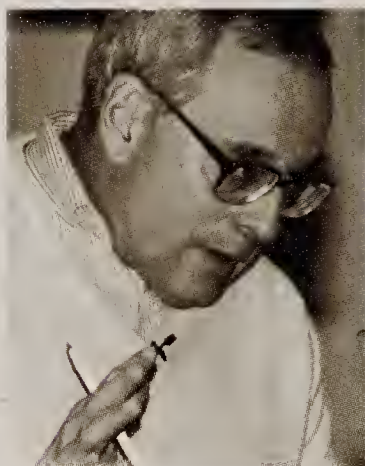
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— F. Warren McFarlan
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SUNDAY, FEBRUARY 2

8:00AM-10:30AM	Registration and Breakfast
12:30PM	Golf Tournament at Monarch Beach Golf Links
3:00PM-6:30PM	Registration
6:30-7:00PM	Retreat Introduction
	F. Warren McFarlan
	Senior Associate Dean
	Director of External Relations
	Ross Graham Walker
	Professor of Business Administration
	Harvard Business School
	Join Retreat participants in an event synopsis
7:00PM-10:00PM	Partner's Cafe
	Meet other participants and Retreat Partners

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MONDAY, FEBRUARY 3

- 7:30AM-8:15AM Breakfast
 8:15AM-8:30AM Welcome and Opening Remarks
Joseph L. Levy
*Group Publisher & President
 CIO Communications, Inc.*
 8:30AM-10:00AM Managing in the Marketplace
John J. Sviokla
*Assistant Professor of Business
 Administration
 Harvard Business School
 Implications for the CIO of shifting
 from marketplace to marketplace*
 10:00AM-10:30AM Mid-Morning Break
 10:30AM-11:15AM Exploiting the Virtual Value Chain
John J. Sviokla
*Showing how to extract value in
 "place" and in "space"*
 11:15AM-12:00PM Cybersmith Case Study
John J. Sviokla
*Examine this tech-retail-store-cafe
 entrepreneurial Web venture*
 12:00PM-1:30PM Luncheon
 1:30PM-2:30PM Concurrent Sessions
*Choose among several sessions
 offered by our Partners*
 2:45PM-3:45PM Concurrent Sessions—Repeated
 4:00PM-5:00PM Summation of day's case study and
 preview of Tuesday's case study
 6:30PM-7:30PM Partners' Cafe
*Meet other participants and Retreat
 Partners*
 7:30PM Dine Around or Captain's Table

TUESDAY, FEBRUARY 4

- 7:30AM-8:15AM Breakfast
 8:15AM-10:00AM Business Process Redesign and the
 Role of Intranets
F. Warren McFarlan
*Changes in infrastructure being facili-
 tated by today's new technologies*
 10:00AM-10:30AM Mid-Morning Break
 10:30AM-12:00PM Enterprise Value Case Study:
 Southwire Corporation
F. Warren McFarlan
*View, in depth, this privately-held \$2
 billion power cable manufacturing
 company*

- 12:00PM-1:30PM Luncheon
 1:30PM - 3:45PM Case Study Workgroups
*Break into small groups to develop
 the case*
 4:00PM-5:00PM New Ways of Assessing IT Services
F. Warren McFarlan
*New reflections on the make/buy
 decision*
 6:30PM-7:15PM Enterprise Value Awards Reception
Meet the Award winners and judges
 7:15PM Enterprise Value Awards Ceremony
 and Dinner
*Join CIO and AT&T Solutions in
 recognizing the winners of the
 Enterprise Value Awards*

WEDNESDAY, FEBRUARY 5

- 7:30AM-8:15AM Breakfast
 8:15AM-9:15AM Case Study: Roundtable Presentations
 and Discussion
F. Warren McFarlan
Examine breakout solutions
 9:15AM-10:00AM Case Study: Epilogue and Reflections
F. Warren McFarlan
Roy Richards, Jr.
*Chairman and CEO
 Southwire Corporation*
Lee Hunter
*Vice President
 Environmental & Technical Support
 Southwire Corporation
 Review case decisions with
 company executives*
 10:00AM-10:30AM Mid-Morning Break
 10:30AM-11:45AM Delivering IT Results in the
 Information Mediated Age
F. Warren McFarlan
*Techniques and processes for
 ensuring attractive bottom line results*
 11:45AM-12:00PM Summary
F. Warren McFarlan

Reservation Form on Back Page

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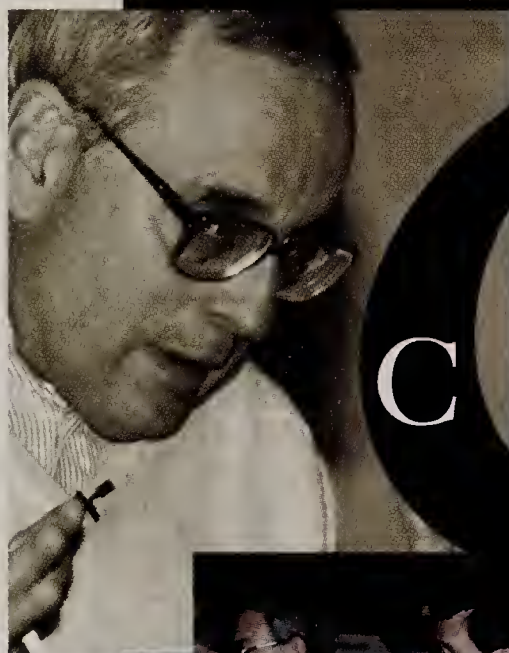
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Emerging Technology

ble. Xerox Corp.'s Architecture and Document Services Technology Center, for example, "really tries to avoid the model of doing research and just delivering a set of findings to somebody," says Susan Anderson, manager of the Center's work practices and co-development group. When a university library system collaborated with Xerox's engineering department to create a system for tracking and offering text from reserve reading lists, Anderson's group worked closely with the engineers and the library to understand the needs of both. The engineering department already had a product prototype, but the ATG helped refine it by traveling to the library and researching its existing reserve reading system and technologies. From there, the group determined which new technologies would fit best with the existing system, presented its findings to the engineering department and helped them develop the next product iteration of what ultimately became a World Wide Web-based document repository.

Once they understand what the business units are looking for, technology-minded ATGs must learn how to dig deep into their often neglected creative sides to present their recommendations in an

"If a company isn't ready to hear the solutions yet, the ATG's suggestions are going to fall on deaf ears.

People will say, 'Don't bother me with things three years out—I've got a problem with my PC right now.'"

—Kim Sienkiewicz

appealing way. Even perfect technology solutions are useless if no one can be persuaded to try them. "A list of specifications is just a list," says Anderson. "We want to paint a picture so that anybody can understand what they need and why they need it." When Xerox's ATG proposes a technology solution, it gives multimedia presentations featuring videos of animation, simulations, drawings and a customer site.

CompuCom's Dowling is also mulling over new ways to let people know about technologies his ATG introduces. He's considering demos, screen cams, glossy brochures and the PointCast Network, an Internet screen-saver that can broadcast up-to-the-minute news on all internal technology developments.

Within the ATG, Piatt takes spreading the word so seriously that he evaluates his group members'

LEADING

EDGE

Cyber This

EVERY COMPANY IS TRYING TO HITCH its wagon to the coolest thing going by adding "cyber" to both its name and products. And it's probably a smart move considering that, one by one, the perceived weaknesses of the Web are being eliminated. Take electronic commerce, for example. In the past, people rejected it because it was an insecure vehicle for small transactions.

But now there's a product that makes microtransactions both viable and secure. CyberCash Inc.'s **CyberCoin** service (note the requisite prefix) lets consumers securely pay merchants as little as 25 cents over the Internet. Launched last October, CyberCoin is like an electronic wallet: Consumers set aside money from their bank accounts or credit cards in a special account called a CyberCash wallet. When they want to purchase an item they see online, their bank instantly transfers money from their CyberCash account to the merchant's account and withdraws a small transaction fee. The merchant then makes arrangements with its own bank to retrieve the money. Any bank can be used, and the software is free to both merchants and consumers.

Since the consumer's money is kept in the bank, it remains FDIC insured. In addition, public key cryptography from RSA Data Security Inc. and digital signature technology from VeriSign Inc. increases the security of microtransactions. For more information, or to download a wallet, visit CyberCash at www.cybercash.com.



G'day, Mates

THAT POOR WOMAN DOWN IN AUSTRALIA! To demonstrate PictureTel Corp.'s new **SwiftSite** videoconferencing system to trade show visitors in California, she had to sit at attention for hours as curious CIOs strolled past her image, carrying cocktails. But if the point of her presence was to impress, her efforts definitely worked for PictureTel. Trade show attendees delighted in conversing with a woman halfway around the world whose every word and expression were crisply conveyed on the screen. The demonstration illustrated how remote employees can work together without missing each other's important visual cues and body language.

PictureTel's SwiftSite is a portable system, weighing in at less than 10 pounds, that makes videoconferencing possible using an ordinary TV monitor and ISDN phone lines. SwiftSite's camera, microphone, and video and audio compression components are combined in a one-piece unit designed for easy transportation and use. The system is connected to a TV monitor, and a handheld remote control allows users to zoom in or adjust the volume. The Superdirective microphone automatically locates each person's voice and eliminates background noise for more natural conversations. Users can receive instant software updates and upgrades via a dial-in server, and real-time assistance with online documentation and context sensitive help is also available. SwiftSite's list price is \$8,995.

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Emerging Technology

ability to communicate with the rest of the company. "One-half the criteria for my reviews is based on their success with applying technology," he says. "A quarter of it is success with teaming with other groups for knowledge transfer, and the other quarter is adhering to defined processes and doing a good job of documenting and communicating what we do. That tends to get people focused on working with people and communicating ideas."

Sticking Around

Since ATGs rely so heavily on other business units to tell them what's important, it behooves any ATG to establish good rapport with them. Part of maintaining amicable relations entails sticking around long enough to make sure everything works properly. If an ATG just dumps a technology on a business unit, that technology is likely just to sit until IS eventually is forced to mop up the mess. When that happens, the credibility of both IS and the ATG will slip, and IS will develop a distrust and dislike of its forward-thinking emissaries. That's just one reason why CompuCom's ATG, for instance, doesn't stop at simply selecting a technology; it actually creates and rolls out new applications. "We can't be cavalier about evaluating a technology," says Piatt. "We actually have to deliver the capability—and I'm not just talking about a prototype."

In order to win a contract with the state of California in the fall of 1995, CompuCom agreed to build a Web-based catalog service to help California's universities, government agencies and state-owned utilities research products, generate order quotes, place orders, verify prices and check the status of orders they make with the company. Piatt's team worked closely with CompuCom's IS and sales groups to understand what they needed, built a production scale application and then taught IS staff and the sales force to use it. Armed with that one-on-one training from the ATG, the sales team showed its California customers how to use the application.

The trick is knowing when it's time to step away gracefully. "We see our ATG as a sort of incubator for new technologies," says Piatt. "Typically we will hatch a new application, like a customer Web solution, and deploy it first to a small group. We then market the new capability internally and externally. If it's good and we market it well, interest and demand will soar. We then quickly look for partners to bail us out before we get swamped. We recognize that our group is not really staffed to provide enterprisewide support and rollout, so we look to team up whenever possible."

But with some rollouts, such as the company's data warehousing venture, Piatt's team has yet to relinquish its involvement. They continue to support the warehouse initiative with training, setting up user accounts and auditing data discrepancies because CompuCom's data warehouse is still being developed for other business subject areas, and because Piatt has data warehousing expertise that no other CompuCom directors have.

Converting to a new technology is no small task for a large corporation because there's so much invested in the old technology, says John Deere's Sienkiewicz. "And I'm not even talking about dollars," he adds. "People form emotional attachments."

LEADING

EDGE

Support Central

GHOSTBUSTERS" IS NOT an adequate answer when someone asks "Who ya gonna call?" for systems support. But these days, the right answer is harder to come by as the number of technologies and vendors multiplies, the user base expands and internal IS support becomes taxed to the max. High-tech vendors like Hewlett-Packard, IBM, Digital Equipment and NCR offer support integrated single-source services worldwide. Now Unisys Corp., with its **Unisys OneCall** service, is the latest company to join the pack. Users no longer have to figure out which vendor or help desk to call for their problem; they just call the OneCall toll-free number. Internal IS can ease its support burden by outsourcing some or all of its support duties to OneCall on an ongoing basis or just for the duration of a particular project.



By allying themselves with help-desk specialist Sykes Enterprises Inc., Unisys is ensuring that customer data will be integrated globally and that users will get a consistent level of service when they call, no matter where in the world they call from, says Mary Schmidt, worldwide director for OneCall. The service is available in three configurations, with costs on a per-call or per-incident basis.

Single-source support offerings make sense for both the small business and the giant corporation, according to Thomas L. Sweeny, director and principal analyst of software services at Dataquest in Westboro, Mass. As IT infrastructures become more

complex even in the home office environment, maintaining support relationships with every vendor that is part of the infrastructure is costly and inefficient. Companies like Unisys offer economies of scale as well as coordination, Sweeny says. For more information about OneCall, call Unisys at 800 874-8647, Ext. 660, or visit www.unisys.com.

But sometimes the technology itself is not the issue; sometimes an underlying problem needs to be solved. "In our case, our organization was changing so much that our communication structure had to be reexamined," Sienkiewicz says. "When we come up with a solution, it forces people to acknowledge that there's a problem." **CIO**

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